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**JUNE 1958**

<b>PUBLIC HEALTH IN THE SPACE AGE</b> , Thomas Parran, M.D., Pittsburgh, Pennsylvania	411
<b>16<math>\alpha</math>-METHYL CORTICOSTEROIDS—A New Series of Anti-Inflammatory Compounds; Clinical Appraisal of Their Antirheumatic Potencies</b> , Edward W. Boland, M.D., Los Angeles	417
<b>AORTIC VALVE COMMISSUROTOMY UNDER DIRECT VISION</b> , Jerome Harold Kay, M.D., Robert M. Anderson, M.D., and Jack Sheinkopf, M.D., Los Angeles	423
<b>ADENOLYMPHOMA OF THE SALIVARY GLAND</b> , J. E. Kahler, M.D., and E. C. Pallette, M.D., Los Angeles	425
<b>PSYCHOSURGERY—Present Indications and Future Prospects</b> , Walter Freeman, M.D., Los Altos	429
<b>SLEUTHING—A PUBLIC HEALTH ACTIVITY</b> , Mary Jo Tonelli, M.D., San Rafael	435
<hr/>	
<b>VASOPRESSOR AGENTS—Influence of Acidosis on Cardiac and Vascular Responsiveness</b> , Max H. Weil, M.D., Duarte; Dudley B. Houle, M.D., E. B. Brown, Jr., Ph.D., and Gilbert S. Campbell, M.D., Minneapolis; and Charles Heath, Ph.D., Edmonton, Alberta, Canada	437
<b>TREATMENT OF ATHLETES</b> , James J. Daly, M.D., San Francisco	441
<b>MANAGEMENT OF EMOTIONAL DISTURBANCES—Use of Hydroxyzine (Atarax®) in General Practice</b> , C. M. Dolan, M.D., Hollywood	443
<hr/>	
<b>CASE REPORTS:</b>	
<b>Combined Intrauterine and Extrauterine Pregnancy</b> , Howard Horner, M.D., Los Angeles	445
<b>Acute Renal Tubular Failure—A Report of Two Cases with an Unusual Mechanism of Poisoning Due to Sodium Chlorate</b> , Jerome Radding, M.D., Fresno	446
<hr/>	
EDITORIAL, 451 • CALIFORNIA MEDICAL ASSOCIATION, 453 • WOMAN'S AUXILIARY, 462 NEWS AND NOTES, 463 • BOOK REVIEWS, 466	

**VOLUME INDEX Follows Page 467**

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# California M E D I C I N E

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## Public Health in the Space Age

THOMAS PARRAN, M.D., Pittsburgh, Pennsylvania

YOU HAVE GIVEN me a challenging subject. Only the Delphic oracle could handle it properly and we are much too close to man's tentative breakthrough into outer space to know what this event will mean in the daily lives of men and women. In any interpretation, you have asked me to discuss the public health of the future. My calculated guess must be based on the relatively recent breakthroughs to new knowledge in the many areas from which public health and medicine draw vitality.

An audience such as this is apt to think of public health as a specialty of medicine. Equally valid is the concept that medicine is a specialty of public health, which draws from more of the basic sciences and carries an over-all responsibility to society. Both medicine and public health reflect the social structure in which they operate and of which they are essential parts. Their scope and content are governed by the economic, military and political climate as well as by the status of scientific knowledge.

It seems certain that man will make far more spectacular conquests of space than the present distance from the earth through which the new gadgets are spinning. Their orbits represent relatively few inches in comparison with distances in our imprecisely known universe.

Such future conquests of space probably will be

• Medicine and public health in the space age will work in closer partnership. Both will draw more widely from the behavioral sciences. More spectacular conquests in space will come before man learns much more about man himself and his interrelationships with his fellow man. The past century has been the era of the biological and physical scientist; we are now entering the century of the psychological man. There is a fusion of the sciences—biological, physical and social—in medical research, teaching and service.

One is apt to think of public health as a specialty of medicine. Equally valid is the concept that medicine is a specialty of public health, which draws from more of the basic sciences.

Epidemiology is concerned with noninfectious conditions and is moving into the epidemiology of health. The spectacular gains in life-saving in this country during the past half century are unrepeatable phenomena. The major gains in the future must come in the older ages.

made long before we learn much more about man himself and his interrelationships with his fellow man. At present, almost limitless funds—and a large proportion of the best brain power in every country—are available to expand the space age and to explore other aspects of the physical and biological sciences.

Current support of the behavioral sciences, however, continues at a low level. In a report, "National Support for Behavioral Sciences," issued in Washington in February, 1958, 15 distinguished social scientists urged that our nation use those skills more

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Guest Speaker's Address: Presented before the Section on Public Health at the 87th Annual Meeting of the California Medical Association, Los Angeles, April 27 to 30, 1958.

fully to improve international relations and foster intellectual and moral power. As the report points out, Russia lags behind the West in the biological, sociological and social factors of behavioral science; the behavioral and medical sciences in general have not been pursued in Russia with the same zeal as have the natural sciences; and adherence to Marxist and Pavlovian doctrines has retarded much of Russian neurophysiology and psychology, while political considerations have limited also the objective investigation of human genetics. In view of this, the group believes that the United States should capitalize upon its present position of leadership and move ahead with vigor.

Certain areas of basic research are suggested in the behavioral sciences which can be applied to bettering human life and to strengthening national defense. These areas of study include effects of drugs on behavior and human performance, human capabilities and limitations under stress, creativity, better utilization of personnel, the decision process, group functioning, measurement of the economic process, effects of cultural differences and change, and man-machine system design.

It has been pointed out<sup>3</sup> that public health is an application of technology, resting upon the joint pillars of natural science and social science. During the past century, the natural science pillar has been greatly strengthened; but "until both the pillars are strong, the arch of public health will not be firm." In identifying the causes of disease, and in knowing how to control and prevent them, the primary concern is man's various relationships with his environment. In the past, great emphasis has been placed on the relations between man and the physical and biological aspects of the environment. Now, consideration also is being given to the social aspect of the environment, especially as it interacts with biological and physical stresses. It is well recognized that stress effects are both psychological and physiological; emphasis must be given to fuller understanding of psychological factors in stress and disease reactions.

In May, 1957, we held a series of seminars at the University of Pittsburgh as a part of the ceremonies inaugurating our new chancellor and dedicating our new public health building. The themes were: "Contributions of the Sciences to Public Health in the Years Ahead," and "Fusion of the Sciences for Better Health," as part of the over-all theme, "New Dimensions of Learning in a Free Society." Some of what I have to say here is derived from this experience; in other instances, I shall quote more precisely.<sup>8</sup>

Dr. Warren Weaver, vice-president of the Rockefeller Foundation said, "During these recent years when there has been a considerable lessening of the early distinctions between public health and medicine, there has also been a great decrease in the sharp distinctions between the physical sciences and the biological sciences—there is at present no boundary within the biological sciences across which the physical sciences cannot usefully pass."

In this process of infiltration, there is the resulting integration of all biological sciences into a continuous and more meaningful whole. The viruses are a case in point. In certain circumstances they are inert chemicals; in other circumstances they are reproducing organisms with emergently known genetic behavior—and disease agents of grave seriousness. Who has jurisdiction here? Is it the physical scientist, the biologist or the physician? Clearly, we need to submerge the old distinctions and preserve the interrelations and wholeness of nature.

Dr. Carlyle F. Jacobsen, executive dean for medical education of the State University of New York, referred to the long transition of medicine from the ritual of the priest to today's medicine of the scientist. He observed that the expansion of medical knowledge and teaching in recent years has been dominated by the developing scientific disciplines of medicine itself, absorbing also to itself segments of knowledge from other disciplines in the university so that today biological and natural sciences are so closely interwoven with medicine as to have become the very matrix of medical thought. Physics, chemistry and biology are, indeed, its language and tools. We agreed as to the widespread dissatisfaction about medical education and medical practice despite the goodness of our scientific achievements, and noted that the same is true of public health education and practice.

The past century has been called the era of the biological and the physical scientist. Dr. Fillmore H. Sanford, former director of the American Psychological Association, believes "that we are indeed entering the century of the psychological man—or of the psychological-sociological-anthropological man." He said that "perhaps two hundred years from now, the first half of the twentieth century will be noted as the period in which society moved away from its preoccupation with man as an economic creature of predictable and potentially controllable emotion, ideation, motive, habit, attitude, aspiration and creative impulse."

My colleague, Dr. Robert E. Olson, drew attention to the same problems in public health: "The biochemist who studies the kinetics of a purified enzyme system has only a few variables to control; the



physiologist who studies the metabolism of an intact organ in an animal has many more to consider; the physician who studies a disease process in an intact human animal has even more parameters to correlate and attempt to control in the diagnosis and treatment of his patient. But the public health scientist who is studying the behavior of populations is dealing with an infinitely complex situation, to which, in many instances, only statistical solutions are possible."

In the past, certain factors known to affect public health adversely could be engineered out of the physical environment. Today, there is needed a revealing analysis of the social environment which blocks the way of abundant public health. Most of the degenerative diseases, which constitute our major health problems, have psychosocial components. The so-called psychosomatic diseases such as hypertension, peptic ulcer, rheumatoid arthritis, thyrotoxicosis and schizophrenia have direct psychiatric determinants; others such as obesity, alcoholism and coronary artery disease have at least indirect relations to sociocultural patterns of diet, anxiety-reduction and stress.

Public health needs to be increasingly concerned both in research and teaching with a comprehensive ecological approach to problems of disease and of health if we are to be successful in understanding better the degenerative diseases and mental illnesses. The clinician must expand his horizon to include the role of the family and the community in relation to the disease problem at hand. By the same token, the public health scientist must not be content solely with statistical solutions and epidemiological inferences in his analysis of these knotty problems. The meeting ground for both lies in the interdisciplinary teamplay of a group from many fields of science who are in sympathetic agreement with each other, and who have access to the experimental laboratory, the patient, the family and the community, if need be, in the pursuit of the problem under study.

Those of us who use epidemiological and biostatistical methods primarily should remember that acute clinical observation may supply the clue, even though it be made only on one patient. Claude Bernard, French physiologist, once said, "I do not reject the use of statistics, but I condemn not trying to go beyond them."<sup>1</sup>

I am convinced that the natural philosophers will, in the future as in the past, contribute to our understanding of life, of natural laws and of the universe.

Viewing the sciences in historic perspective, one can detect periodicity. There have been periods of fusion and the reverse—a disintegration of effort. In the earliest period, the natural philosophers were

the universal scientists, exploring all of life in order to gain greater knowledge of its meaning.

In due course, approaches become available for the study of one or another aspect of life and living creatures. This led to specialization which burgeoned medical research and medical teaching until a specialist came to be defined as a person who knows more and more about less and less. There are signs that this trend is being reversed—that a scientist needs to have more than one skill under one skull—and that through a fused spectrum of scientific knowledge, future progress lies. This trend, apparent in medical and public health practice, is to see the patient and his environment as a whole and especially to interpret the dynamic interactions in these man-environmental interrelationships.

We can anticipate great changes in the next decades in public health science and practice. I see unbounded opportunities for the health sciences in the service of mankind, with health departments taking leadership in achieving an equal opportunity for health to which all men of good will must aspire for all peoples, within the limits of their biological and genetic capacities.

It is recognized that epidemiology does not deal solely with infectious diseases. It was through epidemiological investigations that the nature of pellagra and of goiter was discovered. There is an epidemiology of suicides, of accidents, of cancer and of atherosclerosis. Some beginnings have been made in the epidemiology of mental health and disease. I have pointed out elsewhere<sup>4</sup> the need for intensifying greatly these types of epidemiological studies.

When paralleled by biochemical studies, we may, by the epidemiological method, identify disease-prone individuals in a population before they become sick. Once these individuals with biochemical differences can be identified, it may be possible to control internal factors as well as the external environments and thus retard the progression of disease. Almost certainly, there are such psychosocial and nutritional factors. Such knowledge may be to the prevention of degenerative diseases what immunization and good sanitary engineering have been to the prevention of communicable diseases.

Dr. Charles Best of Toronto draws attention to the fact that the behavioral and the biological or biochemical aspects of man are not separated by an impassable gulf. In fact, man's unique central nervous system is in intimate contact with all cells and exerts profound effects upon cellular metabolism and function through direct nervous as well as indirect hormonal action and is in turn influenced by them and other chemicals such as the lysergic acid and promazine derivatives. The Communications Infor-

mation Center for autonomic functions, the hypothalamus, with the adjoining reticular substance, not only controls blood pressure, pulse rate and gastric motility, but also mediates impulses which modify appetite, sleep and the secretion of pituitary hormones. These concepts open up a Pandora's box of scientific miracles.

But in our preoccupation with these newer and complex problems, public health workers should continue emphasis upon traditional bases for action. We need also to apply to the newer problems the principles which have been learned from the past. We need to finish the job of eradicating diseases such as tuberculosis, of holding the line against the intestinal diseases, of curbing the many and strange viral infections, of reducing accidents and of lessening perinatal mortality.

**W**e should not forget that, for most of the world's population, many ancient plagues still are unconquered. For example, every one of us in public health is heartened to know that world-wide action is being taken against malaria under the leadership of the World Health Organization. Backed by the best experts from all around the world, the strategy calls for *eradication*. It is a bold concept which must be realized in any one geographic area without delay if the malaria-carrying mosquitoes are not to become resistant to the insecticides now available. President Eisenhower has urged that the project be carried forward and Congressional leaders of both parties have provided strong support in hard dollars to make this venture a reality.

As one looks back, man has been concerned over the centuries with getting enough food to meet his basic metabolic needs and with controlling his microbiological environments. Neither objective is met for most of the world's peoples. The continued growth of population—estimated at 1.6 per cent per year—may continue to outrun increased food production. Consequently, public health must be concerned with problems of natality as well as with those of mortality.

The economy of scarcity has been superseded by overabundance in the United States. Hence, we are concerned here with metabolic disorders, obesity, alcoholism and effects of smoking, which are disorders of excess rather than deficiency. Even the concept of stress as a cause of mental ill health connotes excess—the impact of more challenges than the organism is able to bear. Sir Geoffrey Vickers said: "Our hazards from excess range from excessive nuclear radiation through excessive smoking, to the excessive consumption of ice cream—products

which have in common the fact that our superabundance is our own desiring."<sup>6</sup>

Recently, George J. Stolnitz reported on "A Century of International Mortality Trends." He concluded that the rise in life expectancy over the past century probably has been more far-reaching than the gains of the previous two thousand years; that the increases in western countries in the expectation of life at birth since 1890 have been more than double the gains over the preceding half century; and that many of the mortality trends in western life changes are "unrepeatable phenomena." It is irrefutable that major gains of the future in life-saving must come in the older ages—beyond 60. In documenting this last point, Stolnitz calculated that if all mortality before age 45 were eliminated, the resulting gains would be no more than half of the rises (in life expectancy at birth) since the beginning of this century.<sup>7</sup>

There is much speculation among demographers concerning what will be the future trend in life expectancy among older people in this and other Western countries. Two hypotheses are:

1. The present population in the older age groups carries in their bodies the many scars incurred over the years as a result of the effects of infectious diseases, malnutrition and other physical results; these scars have accelerated the aging processes, adding to what might be termed normal aging. Hence, we have seen only a slight increase in longevity among older ages. By contrast, the oncoming generation, protected against these physical insults (against trauma) by sanitation, immunization and better nutrition, will age more slowly and hence have a better chance for longer living.

2. The opposite hypothesis is that we—the present oldsters—represent the survival of the fittest and perhaps come from the better genetic stock; and that owing to our current methods of saving the less fit, the stronger biological characteristics of the population are deteriorating.

As yet, there is no conclusive evidence on either point.

Each new breakthrough of a discovery in the health sciences and each shift in living patterns will produce additional tasks for public health. Certainly, we are agreed that additional responsibilities have been produced by urbanization, by industrialization, by the major threats arising from air pollution and even from the density of automobiles on the highways. Yet none of these serious problem areas is solved.

Added to the familiar environmental hazards is, of course, that new factor in man's environment—nuclear fission—and its use for the production of

power. It has been estimated that the current world requirements for energy are about the equivalent of four billion tons of coal annually, and that fifty years from now this requirement will have become at least five times as great. The known supply of fossil fuels is inadequate. In the absence of practical methods for harnessing solar energy and of learning the secrets of photosynthesis, nuclear power is being developed on a huge scale. This will increase at an ever accelerating pace with the backward, power-hungry nations getting into the act but having little comprehension of the dangers involved.

The disposal of the "radioactive garbage" poses a whole series of enigmas, not yet solved by the nations most technically advanced in nuclear fission. Such problems will confront us increasingly. We must develop the organization, the personnel—and, most important of all—acquire the knowledge with which to cope with these problems.

Radiation biology now offers many new fields for research and for the training of persons to deal with them. The Graduate School of Public Health of the University of Pittsburgh is pioneering in such a program of research and in the training of new types of specialists who can combine the knowledge of the traditional health sciences with the newer knowledge of nuclear science. This expanded area of health training will be invaluable in maintaining the health of mankind as we enter nuclear competition.

Thus far I have talked about the health of the public. Yet most of the members of this California Medical Association are properly concerned with the proper diagnosis and the best treatment one can give to the individual patients who seek help. *Cure* is what they ask you to provide. Failing that, they seek the alleviation of their symptoms—especially pain and disability.

When you are called upon to deal with the complicated problems of your patients with a chronic illness, it is frustrating that so often you alone can do little except to prescribe palliative measures. How often do you contemplate the multiple causes, the influence of time, the social determinants in the patient you see today for the first time with advanced disease? Even though you understand these multiple factors—most of them nonmedical—frequently little can be done. Surely our science should move more rapidly toward an understanding of the early predisposing factors of latter chronic ill health.

"Laws and Institutions," wrote Thomas Jefferson, "must go hand in hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths disclosed, and manners and opinions change with the

change of circumstances, institutions must advance also, and keep pace with the times."<sup>2</sup>

Many Americans believe that our present methods of dispensing medical care have not kept pace with the advances in medical science. We can agree with Dr. W. P. Shepard, of the Metropolitan Life Insurance Company, that the quality of medical care currently given in this country is better than any peoples have ever received at any earlier time. But he states the paradox: "There is greater public unrest over the way medicine is practiced today than there ever has been before." His diagnoses—I use the plural because he sees a multiple causation—include the economics of medicine, how paid for and why is it so costly; lack of general practitioners; long delays in waiting rooms; short, abrupt interviews; the long circuit from one specialist to another.<sup>6</sup>

All of us are concerned about maintaining our medical freedoms, since in most other countries medicine has come under greater public control than in the United States. Shepard proposes (a) scientific analysis of the underlying causes of public unrest; (b) efforts to create better public understanding, and (c) some change in the direction of medical education. While I agree, I should like to go further and—at the risk of being less scientific—be more dogmatic.

The pattern of health care is of concern to all of the people, as well as to us, the public health workers. There are no longer two sides of the coin: (1) on the one side, the public health people serve a population; (2) on the other side, the private practitioners dispense care to individuals. In this shrinking world, both must operate together to promote the total health of the population served. This is no time for jurisdictional disputes as between "private practice" and "public health."

The best of modern medical care cannot be "dispensed" in the traditional one doctor, one patient relationship. The time is long passed when any one physician can carry in his brain all the medical knowledge of the day and in his bag—of whatever size—the best means of dispensing it. Consultation should be readily available without taxing unduly the time, the purse or the energy of the patient. But the modern equivalent of the family doctor should be the central figure in the scene. Hence, group practice seems to many the inevitable answer.

Illness strikes unpredictably in a family; it is predictable for population groups. Therefore, it is an insurable risk—whether for college students,

members of labor unions, the civil service or the aged. The American people believe in the principle of insurance and have demonstrated that they want it. (Labor-management health and pension contracts alone—developed since 1944—now cover some 14,000,000 workers and their dependents.)

Persons having one or another type of insurance against illness are becoming increasingly aware of the gaps in their coverage as they read the fine print in the contract. Comprehensive insurance seems necessary in order to provide the comprehensive care which subscribers want and need.

Medical education is too narrowly confined to diagnosis—especially diagnosis of the medical museum piece—and to treatment; too unaware of the opposite extremes of the spectrum—prevention and rehabilitation. Both need to be brought into sharper focus.

Great as has been the revolution in medical education in the United States since the Flexner report of 1910, the change during the next decades will be equally profound. The improved curriculum will include the diagnosis of health and the technique of its maintenance; predictive diagnosis of future ill health; the epidemiology of health in family and larger social groups. A continuing problem will be that of reconciling the need for deeper knowledge (specialization) with the necessity of integrating knowledge. There will be more concern with, and knowledge of world health.

Medical education needs to provide more physicians and other health workers. We are not producing them in sufficient numbers even to keep pace with our burgeoning population. The American people will not accept less medical and health care; they demand more of it—more readily available and of better quality.

We must not only meet the health needs of our own people but do our share in helping our less fortunate neighbors. American technology in the health sciences is warmly welcomed in other countries when given by qualified and sympathetic workers. In the Soviet Union last year, I was impressed by the fact that more physicians and other health workers are being trained than will be needed within the country itself. The same is true of other technologists.<sup>5</sup> They are making an intensive effort to train groups of physicians and other health workers in the language and customs of other countries in the East. We face real competition from the Soviets in giving technical aid. They even have a special institute working on problems of hospital design applicable to conditions in southeast Asian countries.

Technological improvements in dispensing medical care may stretch the physician's effective time some-

what, but no techniques or gadgets can replace the leisurely, wise, understanding counsel that the patient seeks and expects from the physician. Herein lies healing power beyond all the miracle drugs of modern vintage. More and better brains among our oncoming generations should be brought into the health sciences. To do this, present financial and other barriers must be lowered.

Medicine and public health in the space age will work in closer partnership. Both will draw more widely from the behavioral sciences.

To meet nuclear hazards concomitant with the space breakthrough, American scientists must shoulder their share of world leadership by developing the organization, training personnel and pursuing the research vital for survival as man probes deeper into the secrets of a shrinking cosmos.

The shape and form of health service will mirror the society it serves. Inevitably, there will be sharper focus upon prevention of disease and disability in the individual as well as far more emphasis upon the rehabilitation of those for whom preventive measure have failed. The care of chronic patients will achieve professional equality with the care of acute illness. The changes in medical practice will reflect the deeper social conscience which maintains the equal right to health and life as a prerogative of every American.

As to individual physicians, whatever their specialty, they have the golden opportunity to recapture, in the space age, that larger place which our ancestors occupied in past generations. As we become unselfish servants of humanity rather than technicians in pursuit of personal goals, we shall achieve the larger role.

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# 16a-Methyl Corticosteroids

## A New Series of Anti-Inflammatory Compounds; Clinical Appraisal of Their Antirheumatic Potencies

EDWARD W. BOLAND, M.D., Los Angeles

IT IS NOW ESTABLISHED that the biologic properties of hydrocortisone and cortisone may be altered quantitatively, sometimes selectively, by substituting certain chemical groupings and by making minor configurational changes in molecular structure. During the past five years chemists have worked diligently to design synthetic steroid compounds that could be applied as treatment agents more successfully than the naturally occurring hormones—steroids which ideally would retain powerful anti-inflammatory action but be free of the physiologic properties which induce deleterious effects. Hundreds of synthetic compounds have been prepared and tested in animals; many of these have been investigated clinically and a few have been introduced commercially as suppressive drugs for rheumatoid arthritis and other responsive conditions. Of the modified compounds that have been made available, some possess advantages in one respect or another, but as yet none is divested of the major deterrent features of corticosteroid therapy, and some produce peculiar objectionable reactions of their own. Hence the search for more efficient derivatives has continued.

The development of synthetically modified steroid compounds has proceeded in step-by-step fashion. The first important discovery was that the anti-inflammatory potency of hydrocortisone and cortisone could be enhanced and that some of their other physiologic effects could be changed by substituting halogen atoms at the ninth carbon position of the steroid nucleus.<sup>12,13</sup> As an example, one such derivative—9a-fluorohydrocortisone—was found to be about ten times as powerful as hydrocortisone, per milligram, in respect to antirheumatic and certain other properties.<sup>4,5</sup> However, its sodium-retaining and potassium-losing effects were so excessive that it could not be applied systemically as an anti-inflammatory drug. A second major chemical innovation was the introduction of a double bond between the first and second carbon atoms in the steroid ring, resulting in the production of prednisolone and

• Four new derivatives of hydrocortisone, each containing in common a methyl grouping at the 16a-carbon position of the steroid molecule, have been synthesized and are being studied in human subjects. The compounds are 16a-methyl 9a-fluoroprednisolone (MK-125; hexadecadrol), 16a-methyl 9a-fluorohydrocortisone (MK-126), 16a-methylprednisolone (MK-110), and 16a-methylhydrocortisone (MK-117). Biologic tests in animals have indicated that these analogues exhibit, in varying degrees, striking alterations of several physiologic properties, including enhanced anti-inflammatory activity unassociated with corresponding disturbance of electrolyte metabolism.

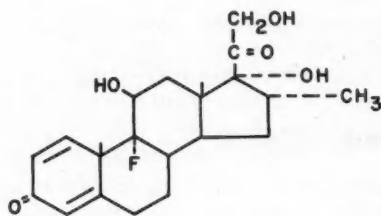
In the present study preliminary observations of the effects of the four new compounds were made in patients with rheumatoid arthritis. Clinical estimates of the antirheumatic potencies of the compounds, as compared with prednisolone, were accomplished by determining the milligram dosages required to maintain similar degrees of improvement of active rheumatoid manifestations. The approximate antirheumatic potencies of the compounds, on an average, were gauged as follows: for 16a-methyl 9a-fluoroprednisolone, about seven times greater than prednisolone; for 16a-methyl 9a-fluorohydrocortisone, about three times greater; for 16a-methylprednisolone, approximately one-third greater; and for 16a-methylhydrocortisone, about 70 per cent that of prednisolone. In the dosage used, none of the compounds promoted discernible salt and water retention.

These observations would indicate that 16a-methyl 9a-fluoroprednisolone (hexadecadrol) possesses greater anti-inflammatory potency per milligram than any steroid yet produced. The therapeutic efficiency of the compound on long-term administration is being studied.

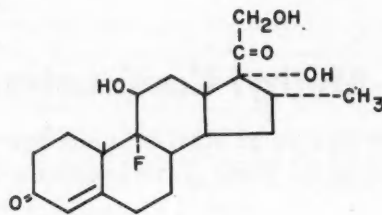
prednisone.<sup>14</sup> These analogues of hydrocortisone and cortisone have approximately four times the anti-inflammatory potency of their parent compounds—yet their electrolyte activity is not intensified correspondingly.<sup>9,10</sup> The relative dissociation of these two properties has made prednisolone and prednisone useful therapeutically, but the compounds have greater proclivity to promote certain undesirable reactions, notably digestive symptoms, peptic ulcers and cutaneous ecchymoses.<sup>6,8</sup>

From the Department of Medicine, St. Vincent's Hospital, Los Angeles. This study was supported, in part, by a grant from the Ahmanson Foundation.

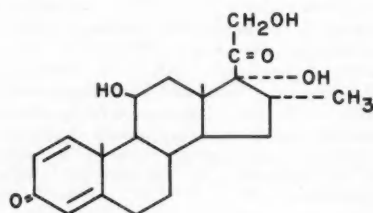
Submitted May 5, 1958.



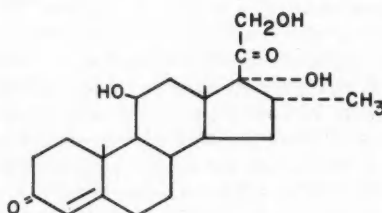
16 $\alpha$ -METHYL, 9 $\alpha$ -FLUORO-  
PREDNISOLONE



16 $\alpha$ -METHYL, 9 $\alpha$ -FLUORO-  
HYDROCORTISONE



16 $\alpha$  METHYL PREDNISOLONE



16 $\alpha$  METHYL HYDROCORTISONE

Chart 1.—Structural formulas of a new series of corticosteroid compounds: 16 $\alpha$ -methyl analogues of hydrocortisone.

Another significant discovery was that the addition of a hydroxyl grouping at the 16-carbon position eliminated the excessive electrolyte activity of 9 $\alpha$ -fluorination.<sup>3</sup> Triamcinolone (9 $\alpha$ -fluoro-16 $\alpha$ -hydroxyprednisolone), for example, contains a fluorine atom at the ninth carbon position and is relatively free of salt and water retention when ordinary doses are prescribed. The compound has about the same milligram antirheumatic potency as prednisolone<sup>11</sup> and appears to have little or no additional merit as a treatment agent for rheumatoid arthritis. In 1955 several methylated corticosteroid derivatives were synthesized<sup>15,16</sup> and the effects of one of them—6 $\alpha$ -methylprednisolone—have been studied in human subjects. Metabolic and clinical investigations have shown that the sodium-retaining and potassium-losing activities of the drug may be slightly less than those of prednisolone, but the other biologic properties of the two compounds, including antirheumatic effect, are about the same when equal milligram amounts are administered.<sup>7</sup>

#### 16 $\alpha$ -METHYL CORTICOSTEROID COMPOUNDS

Recently Sarett and co-workers<sup>1</sup> synthesized a new family of hydrocortisone analogues containing, in common, a methyl grouping at the 16 $\alpha$  carbon posi-

tion of the steroid nucleus. Screening tests for the biologic behavior of these compounds in animals, conducted at the Merck Sharp and Dohme Research Laboratories, indicated that methylation at the 16-carbon position produced striking changes in several physiologic properties, including a decided intensification of anti-inflammatory action and an absence of sodium retention with the experimental dosages tried. The following new steroids were prepared and made available for clinical trial:\* 16 $\alpha$ -methyl 9 $\alpha$ -fluoroprednisolone (MK-125: hexadecadrol), 16 $\alpha$ -methyl 9 $\alpha$ -fluorohydrocortisone (MK-126), 16 $\alpha$ -methylprednisolone (MK-110), and 16 $\alpha$ -methylhydrocortisone (MK-117) (Chart 1).

Preliminary assessments of the potencies of various biologic effects of the four compounds, as compared with those of hydrocortisone, were made in laboratory animals.<sup>2</sup> Some of the pertinent results of those studies may be summarized as follows: As to anti-inflammatory activity, as gauged by the inhibition of granuloma formation in rats, the four compounds compared with hydrocortisone as follows: 16 $\alpha$ -methyl 9 $\alpha$ -fluoroprednisolone, 190 times greater; 16 $\alpha$ -methyl 9 $\alpha$ -fluorohydrocortisone, 36 times greater; 16 $\alpha$ -

\*Supplied by the Merck Sharp and Dohme Research Laboratories, Division of Merck and Co., Inc., Rahway, N. J.

TABLE 1.—Comparisons of Milligram Dosages of 16a-Methyl 9a-Fluoroprednisolone (MK-125: Hexadecadrol) and Prednisolone Required for Equivalent Degrees of Rheumatic Control

Patient	Dosages (Mg./Day) for Equivalent Rheumatic Control		Dosage Ratios: 16a-Methyl 9a-Fluoro- prednisolone to Prednisolone	Potency Ratios: 16a-Methyl 9a-Fluoro- prednisolone to Prednisolone
	Prednisolone	16a-Methyl 9a- Fluoroprednisolone		
1.....	15.0	1.75	1 to 8.6	8.6 to 1
2.....	8.75	1.0	1 to 8.8	8.8 to 1
3.....	20.0	3.5	1 to 5.7	5.7 to 1
4.....	10.0	1.0	1 to 10	10 to 1
5.....	12.5	2.0	1 to 6.3	6.3 to 1
6.....	12.5	1.5	1 to 8.3	8.3 to 1
7.....	10.0	1.25	1 to 8	8 to 1
8.....	15.0	2.0	1 to 7.5	7.5 to 1
9.....	17.5	1.75	1 to 10	10 to 1
10.....	7.5	1.0	1 to 7.5	7.5 to 1
11.....	12.5	2.0	1 to 6.3	6.3 to 1
12.....	7.5	1.0	1 to 7.5	7.5 to 1
13.....	8.75	1.25	1 to 7	7 to 1
14.....	15.0	2.5	1 to 6	6 to 1
15.....	7.5	0.75	1 to 10	10 to 1
16.....	12.5	2.0	1 to 6.3	6.3 to 1
17.....	7.5	1.0	1 to 7.5	7.5 to 1
18.....	10.0	1.25	1 to 8	8 to 1
19.....	10.0	1.25	1 to 8	8 to 1
20.....	10.0	2.0	1 to 5	5 to 1
21.....	10.0	1.25	1 to 8	8 to 1
Average.....	11.43	1.57	1 to 7.3	7.3 to 1

methylprednisolone, 12 times greater; 16a-methylhydrocortisone, 3 times greater. Each of the 16-methylated steroids showed enhanced capacity to promote the deposition of glycogen in the livers of fasting mice. Of considerable interest was the finding that the enormous increase in anti-inflammatory activity of 16a-methyl 9a-fluoroprednisolone (hexadecadrol) was not accompanied by a proportionate increase in glycogenic activity (190 times compared with 17 times). In the experimental doses used, none of the four new analogues induced sodium retention in rats that had had adrenalectomy.

Although animal studies cannot be translated directly into terms of the effect of a steroid in human subjects, the powerful biologic activity of 16a-methyl 9a-fluoroprednisolone indicated that this analogue might prove to be the most potent steroid with adrenocortical function yet prepared. The laboratory findings were sufficiently arresting to invite investigations with each of the new analogues in human subjects.

#### PRESENT STUDY

Clinical evaluations of the effects of 16-methylated derivatives of hydrocortisone in patients with rheumatoid arthritis were begun in December, 1957. The four new steroids have been studied separately and concurrently. The first stage of investigation consisted of an appraisal of the relative antirheumatic potencies of the compounds and the results of this portion of the investigation will be presented herein. Long-term observations of the therapeutic efficiency of two compounds, 16a-methyl 9a-fluoroprednisolone

(MK-125: hexadecadrol) and 16a-methylhydrocortisone (MK-117), with continuous administration are being made and will be the subject of a future report.

Determinations of the antirheumatic potencies of the new steroids as compared with prednisolone were accomplished by establishing the total daily milligram amounts of the compounds required to uphold approximately the same control of rheumatoid manifestations. The method consisted of transferring the treatment of patients from one drug to another and determining the number of milligrams of each substance needed to maintain equivalent clinical improvement. Care was taken to select patients whose maintenance doses of the initial preparation were well established and stable and who had sufficient residual evidences of active joint inflammation to permit objective measurement of changes. The improvement status was recorded at intervals of every three to seven days and appraisal of status was based on an overall estimate of rheumatic control as reflected by the degree of subjective complaints (pain, aching, stiffness, limited functional capacity, and the severity of constitutional reaction), by objective measurements of involved joints (swelling, local tenderness, pain on motion, and range of joint movement), and by changes in the erythrocyte sedimentation rate. Medication was transferred back and forth from the original and test substances in deliberate fashion to allow adjustment and stabilization of dosage in relation to clinical response. In each instance at least two cross-comparisons of dosage were made.

TABLE 2.—Comparisons of Milligram Dosages of 16a-Methyl 9a-Fluorohydrocortisone (MK-126) and Prednisolone Required for Equivalent Degrees of Rheumatic Control

Patient	Dosages (Mg./Day) for Equivalent Rheumatic Control		Dosage Ratios: 16a-Methyl 9a-Fluorohydrocortisone to Prednisolone	Potency Ratios: 16a-Methyl 9a-Fluorohydrocortisone to Prednisolone
	Prednisolone	16a-Methyl 9a-Fluorohydrocortisone		
1.....	20.0	6.0	1 to 3.3	3.3 to 1
2.....	10.0	3.0	1 to 3.3	3.3 to 1
3.....	12.5	4.5	1 to 2.8	2.8 to 1
4.....	12.5	4.0	1 to 3.1	3.1 to 1
5.....	12.5	5.0	1 to 2.5	2.5 to 1
6.....	10.0	3.0	1 to 3.3	3.3 to 1
7.....	12.5	3.0	1 to 4.2	4.2 to 1
8.....	17.5	5.0	1 to 3.5	3.5 to 1
9.....	12.5	4.0	1 to 3.1	3.1 to 1
10.....	7.5	2.0	1 to 3.8	3.8 to 1
11.....	12.5	4.5	1 to 2.8	2.8 to 1
Average.....	12.73	4.0	1 to 3.2	3.2 to 1

TABLE 3.—Comparisons of Milligram Dosages of 16a-Methylprednisolone (MK-110) and Prednisolone Required for Equivalent Degrees of Rheumatic Control

Patient	Dosages (Mg./Day) for Equivalent Rheumatic Control		Dosage Ratios: 16a-Methylprednisolone to Prednisolone	Potency Ratios: 16a-Methylprednisolone to Prednisolone
	Prednisolone	16a-Methylprednisolone		
1.....	15.0	10.0	1 to 1.5	1.5 to 1
2.....	7.5	6.0	1 to 1.3	1.3 to 1
3.....	7.5	6.0	1 to 1.3	1.3 to 1
4.....	10.0	6.0	1 to 1.7	1.7 to 1
5.....	10.0	7.0	1 to 1.4	1.4 to 1
6.....	10.0	7.0	1 to 1.4	1.4 to 1
7.....	10.0	10.0	1 to 1	1 to 1
Average.....	10.0	7.43	1 to 1.3	1.3 to 1

## RESULTS

**16a-methyl 9a-fluoroprednisolone (MK-125: hexadecadrol):** The doses of prednisolone and 16a-methyl 9a-fluoroprednisolone needed to maintain equivalent degrees of clinical improvement were compared in 21 patients. Strikingly smaller amounts of the new steroid were required in each instance. Dosage ratios of 16a-methyl 9a-fluoroprednisolone to prednisolone varied from 1:5 to 1:10.0, and averaged 1:7.3 for the group (Table 1). Thus, from clinical appraisal alone, the antirheumatic potency, per milligram, of the compound averaged about seven times that of prednisolone. By calculation it could be considered to have roughly 30 times the potency of hydrocortisone.

**16a-methyl 9a-fluorohydrocortisone (MK-126):** The anti-inflammatory strength of this compound was also found to be considerably greater than that of prednisolone. Dosage comparison studies made in 11 patients indicated that the analogue was approximately three times as powerful as prednisolone (average, 3.2—range, 2.5 to 4.2) (Table 2).

**16a-methylprednisolone (MK-110):** This derivative exhibited greater antirheumatic potency than

prednisolone, but the variation was fractional rather than multiple. From comparisons made in seven patients, the dosage ratios of 16a-methylprednisolone to prednisolone varied from 1:1 to 1:1.7, and averaged 1:1.3 (Table 3). The findings suggest that the anti-inflammatory strength of the analogue is roughly one-third greater, on an average, than that of prednisolone.

**16a-methylhydrocortisone (MK-117):** The anti-rheumatic activity of this relatively simple analogue of hydrocortisone was studied in sixteen patients. The dosage requirements were compared to prednisolone in 12 patients, and to hydrocortisone in four patients. Surprisingly, its anti-inflammatory power, per milligram, was found, on an average, to be nearly as great as that of prednisolone. Dosage ratios of 16a-methylhydrocortisone to prednisolone ranged from 1:0.6 to 1:1 (average: 1:0.7) (Table 4). Direct comparisons with hydrocortisone yielded proportionately similar results; the milligram dosages of hydrocortisone required to maintain similar degrees of clinical control in four patients were three to three and one-half times greater than for 16a-methylhydrocortisone.



TABLE 4.—Comparisons of Milligram Dosages of 16a-Methylhydrocortisone (MK-117) and Prednisolone Required for Equivalent Degrees of Rheumatic Control

Patient	Dosages (Mg./Day) for Equivalent Rheumatic Control		Dosage Ratios: 16a-Methylhydrocortisone to Prednisolone	Potency Ratios: 16a-Methylhydrocortisone to Prednisolone
	Prednisolone	16a-Methyl- hydrocortisone		
1.....	7.5	10.0	1 to 0.8	0.8 to 1
2.....	10.0	12.5	1 to 0.8	0.8 to 1
3.....	10.0	10.0	1 to 1	1 to 1
4.....	5.0	7.5	1 to 0.7	0.7 to 1
5.....	17.5	25.0	1 to 0.7	0.7 to 1
6.....	7.5	10.0	1 to 0.8	0.8 to 1
7.....	10.0	15.0	1 to 0.7	0.7 to 1
8.....	10.0	12.5	1 to 0.8	0.8 to 1
9.....	10.0	10.0	1 to 1	1 to 1
10.....	12.5	17.5	1 to 0.7	0.7 to 1
11.....	10.0	12.5	1 to 0.8	0.8 to 1
12.....	7.5	12.5	1 to 0.6	0.6 to 1
Average.....	9.8	13.0	1 to 0.7	0.7 to 1

#### COMMENT

From these clinical appraisals of potency it is evident that the substitution of a methyl radical at the 16a-carbon position intensifies greatly the anti-rheumatic strength of certain 11-hydroxy corticosteroids. None of the four compounds studied produced signs of salt and water retention with the dosages employed during the investigation. The observations conform, in general, with those made in laboratory animals which indicated that the 16a-methyl derivatives of hydrocortisone possessed strikingly augmented anti-inflammatory potency without corresponding disturbance of electrolyte metabolism. It would appear that the discovery of these new analogues represents another important step toward the future invention of ideal suppressive drugs for rheumatoid arthritis and other conditions amenable to adrenocortical steroid therapy. Undoubtedly other compounds containing a 16-methyl substituent will be devised.

It is fully recognized that increased anti-inflammatory potency alone does not imply therapeutic superiority. Rather, the superiority of a steroid depends on its ability to achieve and maintain higher levels of improvement without producing unwanted reactions in greater number or intensity—or, preferably, its capacity to promote better control with fewer or no side effects. Critical clinical observations over periods of many months in large numbers of patients, together with extensive metabolic studies in human subjects, are necessary before the virtues and potential hazards of a drug can be assessed. To date clinical trials with the 16a-methyl steroids now available have been limited and brief, and the results of metabolic studies, designed to ascertain whether they do or do not possess significant and useful dissociations of impeding physiologic properties, are incomplete. Thus it is too early to speculate as to their future therapeutic possibilities.

Nonetheless, preliminary observations with 16a-methyl 9a-fluoroprednisolone (MK-125: hexadecadrol), administered uninterruptedly for periods up to four months, have been interesting. Satisfactory control of rheumatoid manifestations has been maintained with total daily dosages ranging from 0.6 to 2.8 mg. The maintenance dose, as with other steroids, has varied with the severity or activity of the disease, but in a group of 86 patients with rheumatoid arthritis now being treated with the compound, the average dose has been 1.6 mg. a day. The degree of clinical improvement has been elevated in a number of patients following change from prednisolone or prednisone to the new analogue. This has been made possible by the application of relatively higher anti-rheumatic (but lower milligram) doses of 16a-methyl 9a-fluoroprednisolone. Whether these more effective doses will eventually be accompanied by more or less undesirable effects remains to be seen. So far edema has not been observed with dosages of 4.0 mg. a day or less, and the drug, as yet, has not provoked significant gastrointestinal symptoms.

It would appear that other 16-methylated analogues are deserving of thorough clinical appraisal. This is particularly true of 16a-methylhydrocortisone, a relatively simple derivative of hydrocortisone with an antirheumatic potency approaching that of prednisolone and prednisone. In the author's experience, furthermore, it has not induced edema with trial doses as large as 40 mg. a day.

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### Social Security Says:

"A WOMAN who becomes entitled to benefits based on her own earnings and also the wife's benefits on the earnings of her husband would receive no more than the larger of the two amounts. A child who becomes entitled to child's benefits based on earnings of both his father and mother would not receive both payments."

In other words: Double social security taxes paid by one family do not produce benefits for each member paying the taxes. A part of the taxes go to "charity."

—From the Department of Public Relations, American Medical Association

# Aortic Valve Commissurotomy Under Direct Vision

JEROME HAROLD KAY, M.D., ROBERT M. ANDERSON, M.D.,  
and JACK SHEINKOPF, M.D., Los Angeles

THE SURGICAL correction of aortic stenosis has had only limited success with previous methods. The following is a description of direct-vision commissurotomy on the aortic valve, with a report of ten cases.

The first attempt at treatment of aortic valvular stenosis was by Tuffier<sup>3</sup> in 1913—dilatation of the valve by invagination of the wall of the aorta; the single patient operated upon survived ten years with apparent improvement. The next attempt at commissurotomy was not done until 1950, when Bailey<sup>1</sup> successfully passed a dilator retrograde through the carotid artery and into the stenotic aortic valve. Later, he used a transventricular approach to the aortic valve, but this approach was unsatisfactory and was abandoned for a third method described by Bailey in 1953—sewing a pouch on the aorta through which a finger could be inserted to dilate the valve. This blind transaortic approach was an improvement over the transventricular route, but caused aortic insufficiency in some cases; moreover, the commissures did not always yield to the pressure of the finger or even of a dilator.

In 1955 one of us (J. H. K.), with Kaiser and Gaertner,<sup>2</sup> experimented on direct surgical exposure of the aortic valve. Since then, ten patients with severe aortic valvular stenosis have been treated by this method, which permits the surgeon to open the stenotic area adequately while avoiding damage to the valve which would cause insufficiency.

Before operation the anesthetized patient was cooled in an ice-and-water bath until the esophageal temperature was reduced to 33°C. In eight patients the surgical approach was through a median sternotomy; in the other two, through a bilateral anterior opening in the third intercostal space. Temporary ligatures were placed around the superior cava proximal to the azygos vein and around the inferior cava. A ligature was placed around the tip of the right atrial appendage for retraction. A heavy silk ligature was passed around the aorta just proximal to the origin of the great vessels. The adventitia was dissected off the aorta and a 4-0 arterial silk stay suture was placed on the right lateral wall of the aorta at the sinus of Valsalva. A curved aortic clamp

• Symptomatic stenosis of the aortic valve was treated in ten patients by commissurotomy under direct vision during hypothermia. Seven patients survived and were improved.

was applied to the lateral wall of the aorta as close as possible to the base of the heart. A vertical incision 3.5 cm. long was made in the excluded portion of the aortic wall. The superior and inferior venae cavae were occluded and the aorta was cross-clamped just below the origin of the great vessels. The clamp was removed from the lateral wall of the aorta and residual blood was aspirated from the ascending aorta and the left ventricle.

Under direct vision the fused and often calcified commissures were then cut with scissors. This required only a few minutes. The tie around the inferior cava was then released and the resumption of flow from the left ventricle flushed all air from the proximal aortic segment. The clamp was reapplied on the lateral side of the aorta, thereby isolating the aortic incision. The clamp occluding the aorta was removed and next the tie on the superior cava was removed.

Preoperative left heart catheterization had been done in eight of the ten patients operated upon and had revealed pronounced aortic stenosis with differences of pressure as high as 170 mm. of mercury across the aortic valve. Three of the patients died. The other seven were much improved and returned to normal activity.

One death, following combined mitral and aortic commissurotomy, resulted from pulmonary embolism on the fourth postoperative day. Another death occurred at operation when the heart could not be restarted after a satisfactory commissurotomy had been done on a tightly stenotic valve; at necropsy the mitral valve was found to be so stenotic that it admitted only the tip of an index finger, and the tricuspid valve opening was reduced to one-fourth or less of normal. Although a vigorous attempt had been made to improve the patient's cardiac status in the months before, she was in failure at the time of operation. The third death resulted, six weeks postoperatively, from rupture of the thoracic aorta at the line of the incision. At necropsy there was no evidence of healing at this site.

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Submitted February 6, 1958.

## DISCUSSION

Direct vision permits satisfactory relief of the aortic valvular stenosis; results are good in comparison to those achieved by other methods and there is much less danger of causing aortic insufficiency than by various blind techniques. On the other hand, the danger of aortic stenosis with such symptoms as orthostatic inadequacy, angina or left ventricular failure is emphasized by the fact that two patients being prepared for this operation died before compensation could be restored.

Left heart catheterization, with measurement of the pressure gradient across the aortic valve, makes

the diagnosis of this condition considerably more accurate and permits a better assessment of how functionally serious it is in a given case.

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# Adenolymphoma of the Salivary Gland

J. E. KAHLER, M.D., and E. C. PALLETTE, M.D., Los Angeles

ALTHOUGH adenolymphoma of the salivary glands is considered to be an uncommon tumor, it has been observed in nine patients treated at St. Vincent's Hospital in the past decade. Unique is the fact that two of the patients were brothers.

The elder brother, aged 63 years when the adenolymphoma was excised from the right parotid gland, had been aware of its presence for four years. The tumor measured 4 x 2 x 2 cm. Later in the same year, the younger brother became aware of symmetrical parotid enlargement; and three years later, when he was 61 years old, adenolymphomas were removed from both parotid glands. The tumor from the left measured 2 x 1.6 x 1.2 cm.; that from the right, 1.8 x 1.2 x 1 cm. The brothers recalled that their father, several years before his death at 82 years, had had bilateral parotid enlargement, but as he had carcinoma of the colon the parotid tumors were not excised nor was biopsy done.

The other seven patients at St. Vincent's Hospital each had a solitary, unilateral adenolymphoma within or on or adjacent to the parotid gland, in four cases on the left side, in three on the right. Four of the patients were women, three men, aged 47 to 78 years. All these tumors were excised, four days to four years after discovery; the largest was 4 x 3.5 x 3.5 cm.

## Incidence

Since Thompson and Bryant<sup>23</sup> in 1949 collected reports of 163 cases as acceptable instances of adenolymphoma of the salivary glands and added 17 cases that they had observed, 156 new cases have been reported,\* which with the nine here recorded bring the total to 345.

Besides these tumors (also known as papillary cystadenoma lymphomatosum or as Warthin's tumor), which may be regarded as a pure type, Foote and Frazell<sup>4</sup> have found cells resembling these or oxiphilic adenoma in 10 per cent of mixed tumors of the salivary gland.

The great majority of adenolymphomas of the salivary gland are single, uninodular masses, but there are exceptions:

*Bilateral single tumors:* Reported by Martin and

• Adenolymphoma of the salivary glands (here reported for the first time in two brothers whose father also might have had the disease) is typically a benign neoplasm for which excision is the treatment of choice. Incomplete excision may be followed by regrowth, which in some cases has been eliminated by roentgen therapy. Most such tumors are single and uninodular, but they may be multiple and bilateral.

Ehrlich,<sup>13</sup> Nino (cited by Ramage<sup>16</sup>), Plaut,<sup>15</sup> Schulenberg,<sup>20</sup> Thornton,<sup>24</sup> by the authors—one case each.

*Bilateral tumors (number unspecified):* Reported by Lederman<sup>12</sup> (one case), Foote and Frazell<sup>4</sup> (six cases, multinodular in three).

*Bilateral tumors, multiple on one side only:* Reported by Martin and Ehrlich and by Ramage<sup>16</sup>—one case each.

*Bilateral multiple tumors:* Reported by Martin and Ehrlich—one case.

*Unilateral multiple tumors:* Reported by Cunningham and by Thornton—one case each.

Thus there were 16 patients in whom the disease was bilateral, eight in whom the tumors were multiple on one or both sides of the neck.

Six per cent of all reported parotid tumors were adenolymphomas.<sup>13,21</sup> They occur predominantly in males, in a ratio of 4.5 to 1<sup>6</sup>—even 10 to 1 in a large series.<sup>13</sup>

## Location

The incidence is equal on either side of the neck. There is some question as to whether all adenolymphomas arise from the parotid gland or at least in lymphoid tissue close to the parotid. Martin and Ehrlich<sup>13</sup> and Foote and Frazell<sup>4</sup> believe that all these tumors arise from the parotid gland or lymph nodes containing parotid ducts; others<sup>6,8,23</sup> have reported cases in which the tumor was in the submaxillary region. The point is of some significance in view of the difference in embryological development of the parotid and submaxillary glands.<sup>23</sup> The authors, like others, have observed perfectly encapsulated adenolymphomas, removed from over the sternocleidomastoid muscle, which neither clinically, grossly nor microscopically had salivary gland tissue

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\*1,2,4,5,7,8,9,10,11,14,18,19,20,21,22,24

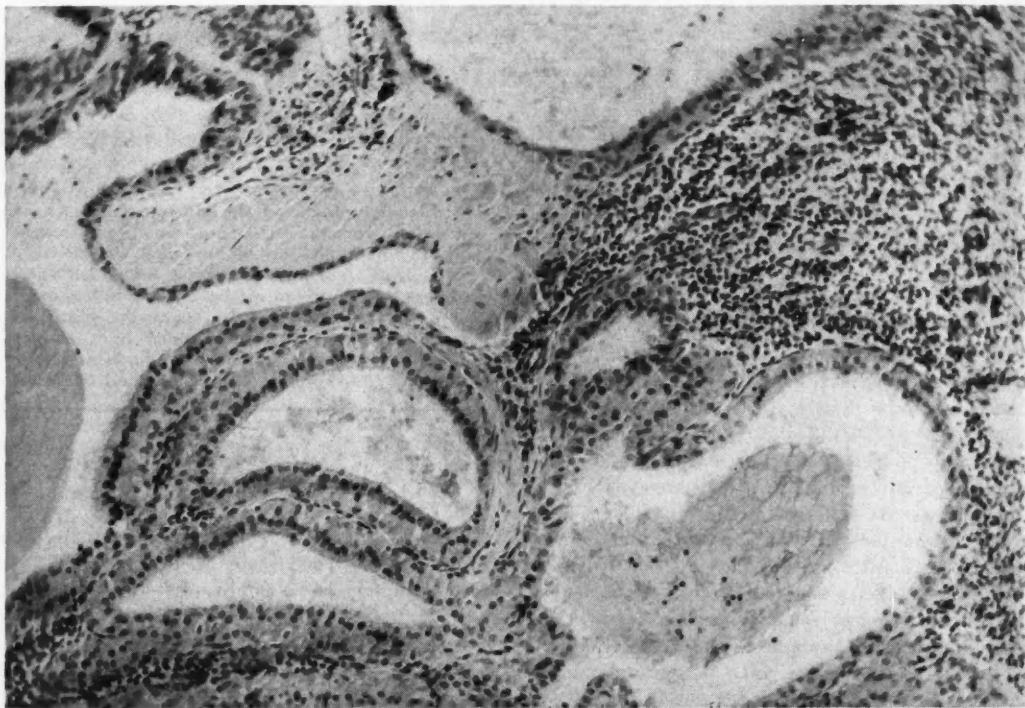


Figure 1.—Photomicrograph ( $\times 100$ ) of a benign adenolymphoma of the parotid gland. Note the irregular distribution of nuclei in the tall columnar cells in the acinus at top right.

on or in the capsule. It requires meticulous dissection by the surgeon, rather than a thought process on the part of the pathologist, to decide whether the tumor arose from the lower pole of the parotid or from the posterior pole of the submaxillary gland. Thompson and Bryant<sup>23</sup> accepted as valid four cases, reported in the literature, of adenolymphoma arising in the submaxillary gland. No adenolymphomas have been described in the other major salivary glands or in the more widely distributed minor salivary gland tissue.

#### Age

The youngest patient reported as having the disease was two and a half years old (Stoehr and Risak, cited by Martin and Ehrlich<sup>13</sup>); the oldest 92 years.<sup>6</sup> The highest incidence is in the fifth to seventh decades.<sup>21</sup>

#### Nomenclature and Histogenesis

It is unnecessary to recapitulate the several excellent discussions of the history of this disease and of its histogenesis.<sup>4,17,21,23</sup> The authors prefer the term adenolymphoma, rather than "Warthin's tumor," since the latter was chosen for its brevity in comparison to "papillary cystadenoma lymphomatosum" and other similarly cumbersome terms, not because

Warthin was the first to describe the disease.<sup>21</sup> The older theories of histogenesis have been replaced by the now generally accepted belief that these tumors arise from parotid ducts or from parotid duct elements in nearby lymph nodes.

#### Gross Appearance

The majority of the lesions occur as well-encapsulated tumors of a dark reddish-gray or red-brown color often resembling an enlarged, congested lymph node. The capsule is delicate and transmits the color of the contained tissue. About one-third of the tumors are partly or wholly cystic with flaccid or tense capsules; the remainder are solid and have the consistency of a lymph node rather than that of a mixed tumor. The fluid content of the cystic foci varies considerably in color, from white or pale yellow to pink or varying shades of brown, but is always turbid and milky or even grumous. The solid portions of the tumor may be a homogeneous red-gray but the cut surface is usually mottled with flecks of light gray, yellow or the dark red-brown of hemorrhage.

#### Microscopic Appearance

An adenolymphoma is composed of characteristic epithelial elements supported by a lymphoid stroma.

The epithelium is double-layered. The layer nearest the basement membrane is composed of small cells that are cuboidal, rounded or triangular in outline and have scanty clear, colorless or pale pink cytoplasm and small round nuclei. These nuclei are slightly smaller and stain less deeply than those of the second layer of cells; the nuclei are vesicular, the nucleoli small. This cell layer is always broken, never continuous. The cells in the layer near the lumen of the acinus or cyst are very tall, columnar and nonciliated, with a brightly eosinophilic cytoplasm. Most observers have reported that this cytoplasm is always finely granular, but there are certainly some instances of adenolymphoma in which the cytoplasm is opaque and nongranular, especially when thin slices of tumor have been fixed in Zenker's fluid without delay. The nuclei of these tall cells are small, round and vesicular with one or two very small nucleoli, or are pyknotic, irregular in outline and hyperchromatic. Most of these nuclei occur in the end of the cell nearest the lumen, but enough occur in mid-cell or in basal position to give the impression of alternation or stair-step appearance. In some tumors large vacuoles appear in the cytoplasm of the columnar cells. In one of the cases reported herein, some of these vacuoles stained for mucoprotein while other vacuoles remained unstained. In another of the cases small foci of stratified squamous epithelium replaced both layers of cells for short distances. Rawson and Horn<sup>17</sup> twice noted sebaceous gland elements in these tumors.

The stroma of the tumor is composed of delicate fibrous connective tissue and a varying number of lymphocytes. These lymphocytes may be so few as to resemble an inflammatory infiltrate or may be so many as to have well-developed secondary centers; they may occupy more space in a given area than the epithelial element does, in which case the structure of a lymph node with marginal sinuses and secondary centers is duplicated. There is no doubt that in several of the cases reported upon herein, the tumor developed within a lymph node from parotid duct inclusions, nor is there any question that the lymphoid element is as integral a part of the neoplasm as is the epithelium. Because there is a tendency to hemorrhage in these tumors (unrelated to trauma or therapy), foci of hemosiderin, cholesterol crystal clefts with foreign-body giant cell reaction and subsequent fibrosis may occur in the stroma.

At one extreme this combination of epithelium and lymphoid stroma may simply form a series of low papillary projections lining a cyst; at the other extreme the projections may be so multibranched and papillary as to form a compact, grossly solid tumor. Occasionally there is so much edema of the stroma that the projections are large bulbous masses

making up the bulk of the tumor. Also the epithelium may sometimes appear multilayered and form small alveoli.

The lesions are always well encapsulated although the capsule is characteristically quite thin. As in all salivary gland neoplasms, tumor cells may occur in the capsule as well as in the adjacent salivary gland parenchyma; conversely, in half of the cases we observed, salivary gland tissue occurred in or beneath the capsule of the tumor.

#### Malignancy

This capacity of the tumor cells to invade the capsule and adjacent gland is probably the cause of recurrence of some adenolymphomata just as it is in benign mixed tumors. In one of the cases observed by us, the tumor regrew promptly after an admittedly incomplete removal. At the second operation the lesion was cystic, measured 4 x 3 x 3 cm., extended from the lower pole of the parotid to the lateral wall of the pharynx and sent an extension down along the jugular vein. The patient was free of disease when last observed five years after the second (complete) excision. Lederman<sup>12</sup> reported a case in which the tumor was excised, rapidly recurred and then disappeared with x-ray therapy. Martin and Ehrlich<sup>13</sup> cited two cases (out of 25) with recurrence after "incomplete removal." Sedgwick and Sass<sup>21</sup> cited one case (of 21) with recurrence and reexcision, following which the patient remained free of disease for eight years. Stevenson and Hazard<sup>22</sup> reported a recurrence seven years later beside, but not at, the site of previous removal of an adenolymphoma. It would seem justifiable, then, to consider a "typical" adenolymphoma a benign tumor, since one has never been reported as capable of metastasis and since the capacity to recur is, in all probability, dependent upon incomplete removal or upon misplaced trust in the impenetrability of the tumor capsule.

"Atypical" adenolymphomas, on the other hand, do exist. Gaston and Tedeschi<sup>6</sup> reported a case of "malignant epithelium and stroma" with two recurrences; after 4,200 r roentgen therapy there had been no recurrence in two years to the time they reported. Rekers<sup>19</sup> cited an instance of lymphoma involving lymph nodes and peripheral blood as well as the stroma of an adenolymphoma. Martin and Ehrlich<sup>13</sup> reported one case associated with reticulum cell sarcoma of the neck and mediastinum. Thompson and Bryant<sup>23</sup> collected reports of 12 cases from the literature in which there was either sarcoma in the stroma or carcinoma in the epithelium. Without opportunity to examine this material or even photomicrographs of the sections in some cases, it would be unwise either to deny the occurrence of malignancy

nant adenolymphoma or to reclassify the cases reported as malignant into some other category. At the same time we believe it fair to assume that the malignant variants of this tumor are readily recognized as such microscopically and that the more common, "typical" adenolymphoma may be considered a benign tumor.

#### Treatment

Complete surgical excision including a thin rim of gland tissue adjacent to the tumor capsule results in cure of a "typical" adenolymphoma. The great majority of the reported cures have been accomplished in this way. Most investigators do not consider roentgen therapy the method of choice. Martin and Ehrlich<sup>13</sup> expressed belief that it has no place in the treatment of these tumors, and Patey and Hand<sup>14</sup> were of the opinion the tumors are completely insensitive to roentgen therapy. On the other hand, in the previously mentioned case reported by Lederman, the tumor recurred after surgical excision and "disappeared" after roentgen therapy. Ramage and co-workers<sup>16</sup> and Kerr<sup>10</sup> each cited one case in which roentgen therapy reduced the tumor, although in both instances surgical excision was eventually resorted to for cure. Kerr commented that the roentgen therapy had produced "patchy areas of degeneration in the stroma" but that the greater part of the tumor was unaffected by the x-ray. In Rekers<sup>19</sup> case of lymphocytic lymphoblastoma involving the stroma of an adenolymphoma as well as the patient's lymph nodes and peripheral blood, roentgen therapy caused the disappearance of lymphadenopathy and lowered the leukocyte count but the tumor only diminished, did not disappear. It is difficult to evaluate the case reported by Gaston and Tedeschi in which both the epithelium and the stroma of the tumor were malignant and in which there was only two years' follow-up. Thus the total number of adenolymphomas treated roentgenologically is too small for judgment of the effectiveness of this kind of therapy; one might conclude that the tumor is moderately radiosensitive but not radio-curable.

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# Psychosurgery

## Present Indications and Future Prospects

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NINE YEARS AGO, when the first institute in Psychiatry and Neurology was held at the Veterans Hospital in North Little Rock, psychosurgery was approaching its peak. Today it is in eclipse, overshadowed by the tranquilizers and euphorants. The same phenomenon was observed 20 years ago when the insulin and convulsive shock methods were becoming widely used. Nowadays insulin shock has scarcely more than historical interest and the use of electroshock has been substantially reduced. These ups and downs are characteristic of the urge to apply dramatic and sometimes drastic remedies in an effort to restore large numbers of psychotic patients to society. They also permit time to assess results on a long-range basis and to determine the indications and contraindications for various methods.

Psychosurgery never became as widely adopted as electroshock or drug therapy. In 1949, when lobotomy was at its peak, it was applied at the rate of only 6.5 per 1,000 patients residing in mental hospitals.<sup>12</sup> While some 18,500 operations were analyzed in Kramer's<sup>12</sup> review of reports of operations done in the period 1936-1948, few long-range studies were then available. Recently I reported upon a follow-up study of some 500 Freeman-Watts<sup>10</sup> prefrontal lobotomy cases after lapse of between ten and twenty years since operation. This study showed that it required two years for stabilization of the personality of the persons who had the operation and that thereafter the late relapses were balanced by late improvements. During the 10-20-year postlobotomy period 70 per cent of the patients were out of the hospital and 50 per cent of all survivors were employed or keeping house.

Yet by 1949 prefrontal lobotomy had given place to transorbital lobotomy and other selective operations, since the latter were found to be less damaging to the personality and equally effective therapeutically. I shall have to omit discussion of the 30 or 40 other ways of producing lesions in the frontal lobes. They are in varying degrees safe, accurate and clinically effective, yet none has been proved superior to transorbital lobotomy. All of them are so time-

• Although the advent and widespread use of ataractic drugs has more or less eclipsed lobotomy as a method of dealing with severe psychotic states, variations and adaptations of the operation still can be used with benefit in certain pretty well defined circumstances.

"Chemical lobotomy" and regressive electroshock bring about alterations in behavior superficially resembling those of lobotomy, but without the changes in personality that are the object of lobotomy. These desirable changes consist in increased extraversion, decreased preoccupation with self and decreased sensitivity to the opinions of others. With restricted operations, undesirable changes—the "frontal lobe syndrome"—do not occur.

Operative failures are due to three main causes: (a) Preoperative emotional deterioration; (b) progress of the underlying disease; (c) relapse, possibly due to inadequate operation.

Lobotomy is advisable if the patient does not show sustained improvement after a year of active treatment by other indicated means. The operation often represents the turning point in effective treatment. After the first year of ineffective treatment valuable time is being lost, with danger of fixation and deterioration. Then it is safer to operate than to wait.

The future of psychosurgery lies in prompt application, in favorable patients, of selective operations that will reverse the trend of illness.

There is particular need for further exploration of the temporal lobes in the hope of finding some procedure that will suppress hallucinations. Some 90 per cent of patients remaining in hospitals after psychosurgery are experiencing hallucinations. If these phenomena can be eliminated without producing serious personality defects, another large field for the application of psychosurgery will be opened.

consuming or require so much aftercare that they cannot be applied where they are needed most—in the state mental hospitals that have a shortage of everything but patients. I have record of more than 2,600 patients in whom I did transorbital lobotomy; and while the period of follow-up is shorter and less complete than for the series of prefrontal cases, nevertheless among 600 private patients there are 80 per cent out of the hospital and 60 per cent either employed or keeping house. The overall discharge

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rate for 2,000 state hospital patients operated upon was 40 per cent. Similar data have been obtained by other investigators in smaller numbers of cases.

Why has so effective a method been eclipsed?

#### OBJECTIONS TO PSYCHOSURGERY

Psychosurgery in general has been condemned by many psychiatrists upon ethical and moral grounds, since the idea of mutilating the brain is abhorrent to them. This represents an emotional status that is not to be influenced by argument or demonstration. A more understandable reason is that psychiatrists continue to see the patients who remain in the hospital—those in whom the operation failed—and lose track of those who return to their homes. In many hospitals the only patients subjected to lobotomy are those who have been totally resistant to other therapy and who are a menace to other patients and to personnel. In the West Virginia study<sup>7</sup> it was observed that the proportion of disturbed patients was reduced by lobotomy from 69 per cent to 21 per cent. Even that was not enough to permit continuation of the project. In certain other hospitals, in which there was better choice of patients, 80 to 90 per cent of those operated upon were discharged, most of them within days or weeks after transorbital lobotomy.

Neurological surgeons, as a rule, have condemned transorbital lobotomy. It cannot be described as a delicate brain operation and it offends their ideas of neatness and precision, although Watts, who now employs that method almost exclusively, long ago said that "the surgeon sees what he cuts but does not know what he sees." Even worse, in the eyes of neurological surgeons, is the fact that psychiatrists are performing the operations. This attitude, which might be expressed as "I won't and you shan't," has so restricted the application of this beneficent type of operation that it can be used in only a few hospitals.

Perhaps the most serious charge against psychosurgery is that it alters the personality of the patient. Since this is undoubtedly true the subject deserves more extensive consideration. Indeed, lobotomy is of no value unless it does bring about some change. The nature and degree of these changes are such, however, that in most instances they work for the benefit of the patient, his family and his group whether within the hospital or on the outside. Let me quote a statement by an attorney in one of the large federal bureaus. Married, with four children, he had been incapacitated for two years before he had prefrontal lobotomy in 1940 and for a year afterward. In 1948, when discussing the change in himself, he told Dr. Robinson:<sup>18</sup> "Yes, prefrontal

lobotomy changed me—very fortunately for all concerned! Oh, I think I have suffered some intellectual loss. My briefs seem to lack something of the sweet articulation that they once had. But there are compensations. There is a great deal of competition among the lawyers in my agency. The other people in the building call our corridor 'Ulcer Gulch.' I think my work is a little below average in quality—but I do not have an ulcer."

#### POOR RESULTS

Poor results of lobotomy are traceable to two main factors, poor material and poor surgical technique. Less often responsible for failure are uncooperative families and associated physical diseases such as tuberculosis or cancer. Lobotomy should not be blamed for the occasional progress of schizophrenic psychosis into emotional dilapidation. Some of the patients subjected to operation have already progressed too far in their disease to permit restoration. Some patients have relapse, and only a third of those who do can be benefited by reoperation. The failures in such patients occur in spite of and not because of lobotomy. The personality changes in these three classes of cases are primarily those to be expected in a deteriorating psychosis. They have little in common with the "frontal lobe syndrome" that is the result of too extensive operation.

As to poor operation: It may be inadequate, in which case the patient either does not improve or actually sinks deeper into psychosis; or it may be too drastic, in which case personality changes develop that may be so severe as to be incapacitating. The "frontal lobe syndrome," directly attributable to extensive posterior incisions in the frontal lobes, has been observed in 10 per cent of the Freeman-Watts series and in 1 per cent of the transorbital lobotomy series.<sup>6</sup>

Much has been written about these serious personality changes. To epitomize, it may be said that they represent the Boy Scout virtues in reverse.\* They are likely to be particularly prominent in the early phases after lobotomy and to disappear progressively with the passage of time. Two years is the average period for stabilization after prefrontal lobotomy but even after ten years there are some patients that are still improving in their social adjustment. These undesirable changes persist after transorbital lobotomy only when the patient has non-fatal hemorrhages in both frontal lobes.

Turning now to the desirable changes in personality resulting from psychosurgery, the outstanding ones are increased self-confidence, freedom from

\*A Scout is trustworthy, loyal, helpful, friendly, courteous, kind, obedient, cheerful, thrifty, brave, clean and reverent.

physical and emotional complaints, decreased sensitivity to the opinions of others and reduced preoccupation with self. These qualities enable the patients to adjust in society without the turmoil that they experienced during their period of illness. No longer harassed by feelings of inferiority and failure, they can pursue their goals without the same urge for perfection. No longer dissatisfied with themselves or haunted by the opinions of others, they can direct their capacities into useful channels.

This is the ideal to which the psychosurgeon aspires. Usually he has to be content with something less than the ideal, chiefly because of the unfavorable nature of the patients coming to operation. In a study of 3,000 patients one to twenty years after lobotomy,<sup>9</sup> I noted that better results were obtained in patients whose families could and would undertake the problems of convalescence. In state hospital patients the eventual result depended in large measure on the duration of hospitalization before operation. If the patient was operated upon within a period of six months he had a two to one chance of returning to work. If operation was postponed a year the chances were 50/50. After two years only one in three could return to productive occupation, while after ten or more years of hospitalization only one in ten could do so. This applied to the schizophrenic patients. In patients with affective disorders the end was the same but it took a bit longer for disability to become permanent.

I analyzed the figures another way, comparing hospitals or comparing male and female services in the same hospital. Here the abscissa was the average duration of hospitalization of the patients coming to operation, and the ordinate the percentage of patients discharged. The figures varied from 91 per cent in one receiving hospital where operation was done only in acute cases to 10 per cent where the average duration of hospitalization before operation was 12 years. Comparable data for 60 patients undergoing prefrontal lobotomy at St. Elizabeth's Hospital were 35 per cent for the men (average duration of hospitalization 7.6 years) and 45 per cent for the women (average 6.7 years).

The fact of discharge from hospital was chosen as criterion because of the great variation in other proposed behavioral or psychological criteria. In many instances lobotomy was undertaken in the hope of quieting the disturbed and disturbing behavior of the most seriously ill patients. Various studies showed that the Malamud Rating Scale could be applied not only in demonstrating behavioral changes following lobotomy<sup>8</sup> but also as a modest predictive yardstick.<sup>5</sup> The phenomena most favorably influenced were anxiety, obsessive thinking and self-directed violence, while those least altered

were hallucinations, scattered thought processes and externally directed violence. In state hospital experience, patients came to operation most frequently because of the latter phenomena and, in addition, had the handicap of several years of hospitalization. The results of psychosurgery in such patients were not good enough to justify enthusiasm.

This was the situation at the time the first Institute in Psychiatry and Neurology was held. Although after 1949 there was a decline in lobotomy generally, in some hospitals it was developed more extensively. A great change occurred in 1954 when it was found that reserpine and chlorpromazine had a profound effect upon the disturbed behavior of psychotic patients.

#### "CHEMICAL LOBOTOMY"

As the clinical change in patients under treatment with reserpine and chlorpromazine and a host of other drugs has something in common with the lobotomy effect, psychiatrists, at least in their early studies of these agents, spoke of "chemical lobotomy." The patients became more quiet and friendly, participated in the work of the hospital wards, complained less and, not infrequently, improved enough to return home. In services employing maintenance electroshock therapy to control disturbed behavior there was decided reduction in the need for this therapy. With the improvement in the disturbed patients, the whole character of the service was brightened. Doors were unlocked, draperies added a home-like touch, and the wards were decorated with pictures, light furniture and flower vases—articles that previously might have been used as weapons. Unquestionably the results of tranquilizers were much the same in terms of better behavior in chronically disturbed patients as were the results of lobotomy.

In clinical studies of patients receiving tranquilizer therapy, it has been noted that they have lessened response to external and internal stresses, greater tolerance to frustration, lessened tension and anxiety, better relaxation and improved habits. These are similar to the results achieved by lobotomy. The usual intelligence tests and projective techniques also show only slight differences as compared with the results previous to therapy—usually in the direction of improved scores. Once the emotional turmoil is brought under control, the patient can turn his attention more effectively to the given task. Yet there are differences in the results of tests directed toward personality functioning that show trends toward extraversion following lobotomy that are not seen after drug therapy. Patients receiving drug therapy are more aware of themselves, more self-conscious than those who have had lobotomy.

Perhaps the greatest difference, at least in patients with well marked obsessive tendencies, is persistence of the obsessive ideas in spite of drug therapy given to the point of producing a Parkinson-like syndrome. When this obsessiveness is accompanied by depression, the depression may be deepened to suicidal levels by the administration of drugs like reserpine and chlorpromazine. In such instances attempts can be made to lift the depression by euphoriant drugs—Marsilid® (iproniazid), Ritalin® (methylphenidate) or amphetamine—or by shock therapy, but even so the obsessive component still remains. This is the field in which lobotomy has its most powerful and beneficial effect.

Penetrating observation shows that the "lobotomy effect" of drugs is superficial, practically confined to the behavioral aspects, without altering the personality either in the direction of extraversion or the reduction of obsessive preoccupation with the self. I would epitomize this as the Mona Lisa effect.

In comparison of lobotomy (or psychosurgery in general) with convulsive shock therapy, distinct differences are noted also. Shock is almost specific for depression, but it tends to enhance anxiety. When there is a mixture of anxiety and depression, electroshock may make the patient much worse. On the other hand, lobotomy is not so useful in the control of depression *per se*. If the depression is accompanied by obsessive tension, however, lobotomy relieves that condition, usually to such a degree that modest amounts of euphoriant drugs will bring about the desired result. Some patients have been taking dextro-amphetamine for years after lobotomy with enhanced capacity for useful work.

Intensive shock therapy has been employed by some psychiatrists to bring about clinical regression, characterized by amnesia, disorientation and incontinence. This also has been characterized as a "lobotomy effect." The idea is to eliminate all intellectual activity, to wipe the slate clean, as it were, in order to bring the patient back into harmony with his environment. Sometimes this is successful when, for instance, four or five electroconvulsive shocks are given daily for several days. The profound effect takes some time to disappear, but in the long run the patient still has his same personality and runs the same risk of relapse as before. Regressive shock therapy may be followed by persistent amnesia of organic type that impairs the use of the intellect for a prolonged period. It is particularly disturbing to patients with well-defined obsessive thinking because the effort to recall details is accompanied by feelings of failure and incapacity.

In treating a given patient by physical means it is helpful to analyze the symptoms and to apply remedies in a resourceful manner, varying the attack as

one symptom after another appears to predominate. Thus lobotomy should be considered first in a state of obsessive thinking, especially if accompanied by compulsive behavior. Such states seldom exist in unmixed simplicity; hence if anxiety and restlessness are pronounced factors, ataractic drugs may first be employed. If there is an accompanying depression that does not yield to euphorants, then electroshock may be used freely. Every psychosis or neurosis has an element of obsessive thinking, but only in cases where it is primary or persists in disabling severity, should lobotomy be performed.

#### INDICATIONS FOR PSYCHOSURGERY

Keeping in mind what has been discussed about the effects of lobotomy and kindred procedures, the following conditions, when intractable, are positive indications for operation:

1. Obsessive ruminative tension states with or without compulsions.
2. Involutional psychoses with agitation.
3. Chronic anxiety neuroses.
4. Psychosomatic conditions.
5. Depersonalization syndromes.
6. Pain syndromes, functional or organic.

Lobotomy has also proven of value in undeteriorated schizophrenic states, especially in patients of middle age and with paranoid symptomatology. Periodic catatonic excitements respond better than true manic-depressive states. Fixation and chronicity are serious handicaps to resumption of worthwhile activities, and since restricted lobotomy can be carried out with so little damage to the personality and usually with so beneficial a change, it should be employed more frequently as a preventive to patients whose clinical course indicates insufficient ability to return to normality without it. A patient may come through one or two attacks of mental disorder unharmed, but the danger of deterioration increases with the number of relapses. Lobotomy can often stabilize a patient who otherwise might gradually regress. It is safer to operate than to wait.

Lobotomy was formerly employed freely in some hospitals to eliminate the disturbed behavior of thoroughly disorganized patients. In the West Virginia project<sup>7</sup> there was a reduction of violent patients from 69 per cent to 21 per cent. Since tranquilizing drugs apparently can achieve equal or even better results in such patients, there is no good reason for operating on them. It must be kept in mind, though, that some patients respond poorly to drugs and might do better after lobotomy.

Lobotomy has been tried and found wanting in



large measure in psychopathic states, criminality, alcoholism, drug addiction, epilepsy, mental deficiency and most of the organic brain diseases, although it may reduce the emotional distress accompanying Parkinsonism and the pain of the thalamic syndrome. The indications are not precise in such circumstances, and the presence of obsessive tension should be the clue. Drugs are usually preferred in senile agitated states and in delirium.

Lobotomy is not the last desperate remedy when all else fails, but rather to be considered as the turning point in effective therapy. When milder measures are not sufficient, a beneficent change in the personality produced by lobotomy can enhance the effectiveness of those other measures to a gratifying degree.

#### THE FUTURE OF PSYCHOSURGERY

In the past 20 years lobotomy and similar operations have been developed from crude beginnings through more and more extensive procedures—some so extensive that it was found that if the patient survived he was ill-equipped to take his place in society again. While such procedures may produce occasional brilliant results in chronic schizophrenic patients, they are devastating to better preserved patients. Refinements in the matter of extent and in avoiding trauma to the cortex with its consequent danger of convulsive seizures, have made lobotomy a relatively safe operation. Observance of the proper indications and contraindications, and the proper timing of operations, has made it possible to return some 80 per cent of patients with a fixed state of tortured self-concern<sup>1</sup> to a more cheerful and effective existence. When a patient is operated upon by one of the selective methods before deterioration has set in, the only personality changes that can be measured appear on the positive side of the ledger. This has been best shown, in patients who were not in institutions, by Ayd,<sup>2</sup> Gardner,<sup>11</sup> Longo and his colleagues<sup>14</sup> and by me.<sup>9</sup> With the present methods, such a rate of success cannot be attained in chronic patients in state hospitals. Nevertheless, psychosurgery may be on the threshold of another breakthrough that will bring another host of patients to better health. The fact that the brain of a schizophrenic patient shows no pathologic abnormality either macroscopically or microscopically even after decades of a psychosis, and the fact that occasionally a patient unexpectedly returns to normality after years of confinement, and without any treatment, presents a challenge.

Although not knowing what causes a functional psychosis like schizophrenia or involuntional depression or psychoneurosis, we are nevertheless in a position to apply symptomatic measures. Ataractics

for overactivity and anxiety, euphorants and electroshock for depression, lobotomy for obsessive tension, and mixtures of these treatments for syndromes that show various combinations will enable the psychiatrist to treat effectively a large number of patients. The symptom that stands out most distinctly among conditions responding poorly to any of the above treatments is hallucination. Practically all schizophrenic patients unimproved or relapsing after lobotomy are hallucinated. The effect of drugs and shock therapy is quite beneficial in early cases, but while the reaction of the patients to hallucinations is altered at least temporarily, there is no good evidence that these phenomena are abolished in long-standing cases.

This field seems to offer a chance for renewed efforts in psychosurgery. There is strong evidence that hallucinations indicate perverted activity in the temporal lobes. This was the inspiration of Burckhardt,<sup>3</sup> who extirpated areas in the temporal lobe as long ago as 1888. The auditory and other sensory auras of psychomotor epilepsy were reproduced by Penfield<sup>17</sup> on stimulation of epileptogenic foci in the temporal lobes. Williams and I<sup>4</sup> based our amygdaloidectomy operations on the theory that this nucleus was the source of the motor component of hallucination—the projection of the autochthonous thoughts of the patient with capacity to perceive these as coming from the outside. The results of a small series of operations were inconclusive, but better results were obtained in patients whose temporal lobes were apparently damaged by preexisting disease, although the clinical aspects of the patient suggested schizophrenia. More recently Sem-Jacobsen<sup>20</sup> and his colleagues observed a second-to-second relationship between disturbed electrical activity in the temporal and parietal lobes and manifest hallucinations. There have been no clear-cut results in hallucinated patients following undercutting of the uncus and medial aspect of the temporal lobe or even of bitemporal lobectomy. In light of the profound disturbance of memory caused by bilateral or even unilateral lesions of the hippocampus, operation on this structure would be unlikely to give satisfactory results.<sup>19</sup> Nevertheless, the temporal lobes are large areas and are deserving of investigation in a manner similar to that undertaken on the frontal lobes in the Columbia-Greystone topectomy researches.<sup>13,15,16</sup> If either the motor or the sensory component of the hallucinations could be removed surgically, it is conceivable that the brain could compensate for the defect, just as it does in response to frontal lesions, and permit restoration of the patient to better contact with the world outside himself. The patients in whom extensive prefrontal lobotomy succeeds after failure of transorbital or rostral lobotomy are mostly



those with hallucinations. The apparent difference between the two methods lies in the severing of connections between the frontal and temporal lobes, specifically the uncinate fasciculus. This fasciculus spreads out as a capsule over the amygdaloid nucleus, indicating that this area would seem to be the most logical one to attack; but other temporal areas are also worthy of exploration and of graded extirpation.

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#### Social Security Says:

"IT IS COMMON KNOWLEDGE that most of us because of living costs, social standards, and economic misfortunes, do not set aside enough money or other assets during our working years to provide adequately for ourselves or our families when earned income is cut off by disability, old age, or death."

In other words: Social Security believes that "most of us" must depend upon the government in our "hour of need."

—From the Department of Public Relations, American Medical Association

# Sleuthing — A Public Health Activity

MARY JO TONELLI, M.D., San Rafael

THE HEALTH DEPARTMENT is charged by state law with the control of all communicable diseases. In order to do its job, it must know when and where such diseases occur. Therefore, the same law provides that any physician, nurse, teacher or other citizen must report knowledge or suspicion of a case of communicable disease to the health department immediately. In general the job is one of collecting information as to the amount and kind of disease present in the county, and of education so that people know which disease can be controlled by immunizations, when and how often immunizations are needed, how to recognize diseases and how the health department can take measures to avoid them.

Occasionally there are reported to the health department outbreaks of an unusual character. Such a one is the subject of this communication. In dealing with it the efforts of private physicians, schools and the health department were joined to prevent further occurrence of a formidable disease.

On October 14, 1957, a pediatrician in private practice reported to the Marin County Health Department that he had diagnosed three cases of acute glomerulonephritis in one family following streptococcal throat infections. The patients were 7, 9 and 10 years of age and all attended the same elementary school. This strongly suggested a Group A, Type 12, streptococcal infection. In winter the health department laboratory receives increased numbers of requests for examinations of throat cultures, and the number positive for beta hemolytic streptococcus increases during this season. These throat infections each winter usually come and go and cause no further trouble except in instances in which serious complications such as rheumatic heart disease or glomerulonephritis develop. When it is recognized that Group A, Type 12, beta hemolytic streptococcus is lurking in a community, it is time to make a concerted effort to locate the organism and develop plans to eradicate it before the deleterious effects of acute glomerulonephritis can spread further.

The elementary school which the children attended is located in a new subdivision in Marin County where the homes are occupied in the main by young families, mostly business and professional people,

• Because of the unusual coincidence of three cases of acute glomerulonephritis in one family, a private pediatrician was able to alert the Marin County Health Department to the presence of a formidable organism, Group A, Type 12, streptococcus in one community in Marin County. With the cooperation of private physicians, schools, a public health team and the Stanford University Research Laboratory, this outbreak was halted at its very start.

in an unincorporated area somewhat apart from other residential and business centers.

With the cooperation of the principal of the school and technical aid from Dr. Lowell Rantz at Stanford University Medical School, the health department team consisting of nurse, physician and bacteriologist obtained specimens of mucus swabbed from the throats of the classmates of the three young patients as well as from members of the school staff on the day following receipt of the report. To get complete coverage, the public health nurse visited the homes of all children who were absent on that day and took specimens of culture material from their throats. The cultures, 95 of them in all, were examined at the health department laboratory and the ones positive for beta hemolytic streptococcus were forwarded to the Stanford Hospital Research Laboratory for determination of group and type. (Stanford University Hospital Research Laboratory and the United States Public Health Service Laboratory at Chamblee, Georgia, are among the very few laboratories equipped for this diagnostic procedure.)

The report from the Stanford Laboratory showed eight cultures positive for Group A, Type 12, the nephritis-producing streptococcus. This, in addition to the three already known, made 11 positive. Upon receipt of the reports, the family physician and parents of each child who had a positive report were notified and advised to seek preventive treatment at once.

It was decided, in consultation with the school health advisory committee of the Marin County Medical Society, that this was serious enough to warrant extending the examination to the entire elementary school, which was done a week after the report of the first three cases. Of 479 subjects, 25 had cultures positive for Group A, Type 12, streptococcus.

Submitted February 21, 1958.

From a questionnaire sent to the private physician of each child known to have this specific organism, it was determined that eight of the youngsters had a history of sore throat sometime during the week before the culture specimens were taken although they were asymptomatic at the time the material was obtained. In two of these children, signs and symptoms of acute glomerulonephritis developed. Another child, a four-year-old who lived in a neighborhood where infected children played, had streptococcal sore throat and acute glomerulonephritis during the last week in November—some six weeks after the reporting of the first three cases. Of 91 throat cultures taken from family contacts of patients and carriers, none was positive for Group A, Type 12, streptococcus.

The important fact to note is that, of 25 children (in addition to the original three patients) with throat cultures positive for the nephritis-producing streptococcus, only three developed the disease.

The 25 children from whom the Group A, Type 12, organism was cultured were evenly scattered throughout the first six grades of the elementary school. Although the organism is known to spread rapidly within a household, in this survey there was only one such instance apparent.

The prompt recognition of this disease in the community enabled the physicians, school officials and the health department to take the emergency measures necessary to identify the infected persons and to institute preventive treatment which successfully stopped further spread in the community.

920 Grand Avenue, San Rafael.

#### For Your Patients—

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# Vasopressor Agents

## Influence of Acidosis on Cardiac and Vascular Responsiveness

MAX H. WEIL, M.D., Ph.D., Duarte; DUDLEY B. HOULE, M.D., E. B. BROWN, JR., Ph.D., and GILBERT S. CAMPBELL, M.D., Ph.D., Minneapolis; and CHARLES HEATH, Ph.D., Edmonton, Alberta, Canada

QUESTION AS TO THE EFFECT of acidosis on the effectiveness of vasopressor agents suggested itself at the bedside during studies on the value of drugs such as norepinephrine (Levophed®) and metaraminol (Aramine®) for the treatment of patients with bacteremia and shock. It was noted that patients who were in acidosis at the time of onset of the shock state were relatively resistant to the action of these sympathomimetic drugs. Moreover, a progressive decrease in pressor effectiveness on the part of patients who had at first responded well was frequently related to the development of acidosis.

These observations were in harmony with phenomena noted in earlier studies in animals. In 1927, Burget and Visscher<sup>3</sup> noted in experiments with pithed cats that the response of the vascular system could be altered by changing the pH of the blood and that response to epinephrine progressively increased as the pH was elevated from 6.9 to 8.0. More recently Page and Olmsted<sup>6</sup> demonstrated that the pressor action of epinephrine and norepinephrine was diminished in dogs with respiratory acidosis.

Blumenthal, Brown and Campbell<sup>2</sup> observed that the cardioaccelerator response to epinephrine in human subjects was diminished during respiratory acidosis and increased during respiratory alkalosis. These investigators also noted that the bronchodilator action of epinephrine in patients with bronchial asthma was frequently improved following the intravenous administration of molar sodium lactate. These facts suggested that similar considerations would pertain to patients with shock and acidosis.

In experiments that have been published in greater detail elsewhere,<sup>5</sup> epinephrine, norepinephrine and metaraminol were administered to dogs in doses that were calculated to produce moderate elevation in arterial pressure. The arterial pressure and electrocardiogram were recorded and the pH of the arterial blood was measured. After the response to each of these drugs was determined as a control measure-

• Clinical observations have indicated that patients who are in shock and who have coexisting acidosis respond relatively poorly to sympathomimetic amines. In experiments with dogs, it was found that, in the presence of acidosis, the pressor action of epinephrine, norepinephrine and metaraminol was considerably reduced. The effect on cardiac rhythm was also considerably lessened after the pH value of the blood had been lowered.

In view of these observations in animals, six human patients with profound shock and acidosis were studied. All had a considerably lessened pressor response to vasopressor agents; then, after elevation of the blood pH by intravenous infusion of a 1-molar solution of sodium lactate, responsiveness was restored.

These observations emphasize the desirability of close observation of the acid-base status, and early treatment of acidosis, as an important aspect in the management of patients with shock.

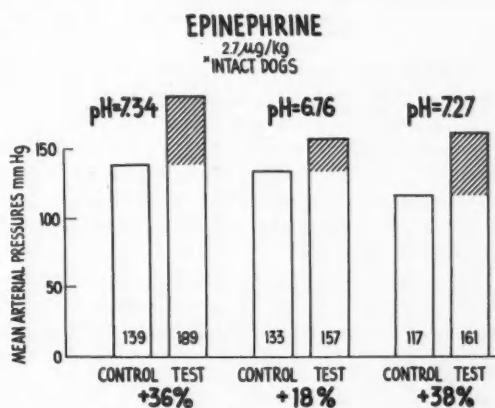


Chart 1.—Relationship of responsiveness to vasopressor agents at normal pH values of arterial blood, and during acidosis in intact dogs.

ment, acidosis was produced by allowing dogs anesthetized with thiopental to breathe a gas mixture containing 30 per cent carbon dioxide and 70 per cent oxygen. The test procedure with vasopressor agents was then repeated.

From the Departments of Physiology, Medicine and Surgery, University of Minnesota Medical School.

Read before the General Scientific Sessions, American Heart Association, Chicago, Illinois, October 25 to 29, 1957.

Submitted December 13, 1957.

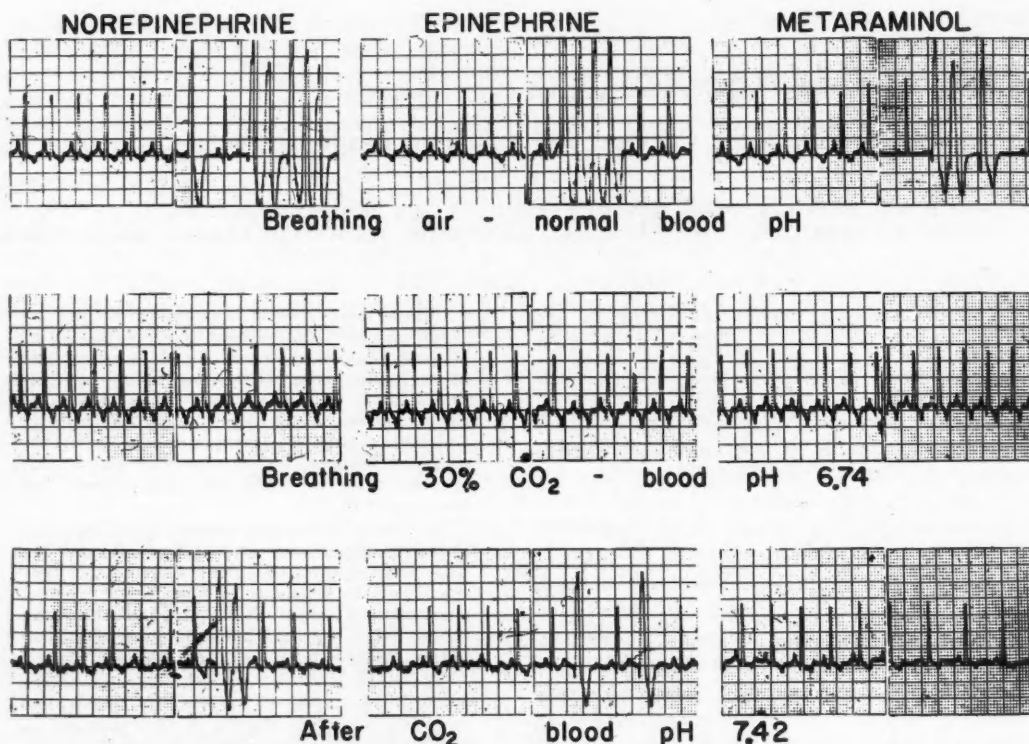


Figure 1.—Electrocardiographic changes following administration of vasopressor agents during acidosis and when the blood pH was at normal values.

Figure 1 is reproduced from the Proceedings of the Society for Experimental Biology and Medicine<sup>4</sup> with permission.

It was found that, in the presence of respiratory acidosis, the pressor responses to each of the three sympathomimetic drugs were diminished (Chart 1). Following the intravenous injection of 2.7 micrograms of epinephrine per kilogram of body weight in five animals with the pH of the arterial blood in the normal range, there was an increase in mean arterial pressure from 139 to 189 mm., which represents an increase of 36 per cent of the control value. However, at pH 6.76 the responsiveness was decreased to 18 per cent. After the pH was raised to 7.27 the pressor response was again increased in this instance to 38 per cent. Corresponding results were obtained with norepinephrine and metaraminol. Pressor responses produced by epinephrine, norepinephrine and metaraminol were also diminished in a similar group of intact animals under condition of metabolic acidosis produced by infusion of a dilute solution of hydrochloric acid.

The electrocardiographic tracings (Figure 1) were of considerable interest. Multiple ventricular extrasystoles and even runs of ventricular tachycardia were produced by each of the sympathomimetic amines when the blood pH was within normal limits.

However, no ventricular dysrhythmias followed administration of the same dose of these drugs in dogs with respiratory acidosis. After blood pH was returned to or near normal values, the cardiac irregularity usually reappeared. Dogs with metabolic acidosis gave a similar response. These observations are being studied in greater detail. We have postulated that the increased ventricular activity which follows administration of lactate solution in patients with complete heart block, as reported by Bellet, Wasserman and Brody,<sup>1</sup> may be related to augmented action of endogenous epinephrine brought about by elevation of the blood pH.

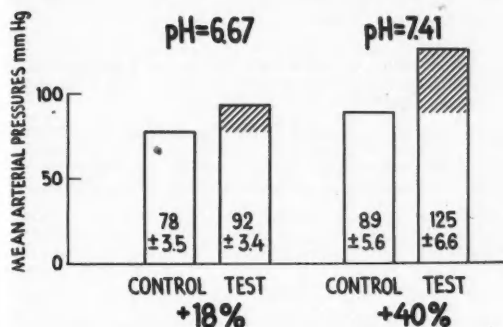
In order to separate the effects on the heart from effects on the peripheral vascular bed, a series of experiments was performed during which the sympathomimetic drugs were administered to dogs subjected to total cardiac by-pass. The method described by Campbell, Crisp and Brown<sup>4</sup> was followed: A homologous lung was used as an oxygenator and Sigmamotor units as pumps in the extracorporeal circuits. The extracorporeal lung was ventilated with the 30 per cent carbon dioxide and 70 per cent oxygen mixture. The response of the animal during



## EPINEPHRINE

13.4g/kg

\* DOGS ON TOTAL CARDIAC BY-PASS



\* AVERAGE VALUES FOR 10 ANIMALS

Chart 2.—The effect of pH on pressor responsiveness to epinephrine in dogs on total cardiac by-pass.

acidosis was determined first and the control portion of the experiment, in which the pH of the blood was near normal, was performed subsequently. Thus, we were assured that any decrease in reactivity during acidosis would not be confused with a possible decrease in reactivity of the preparation related to prolonged cardiac by-pass.

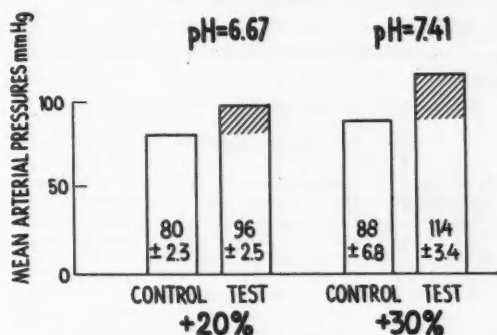
After the heart was excluded from the circulation, pressor responses under conditions of respiratory acidosis were uniformly much less than those of the same animals after pH was returned to or near normal levels. Thus, when epinephrine was injected into dogs that had total cardiac by-pass after the arterial blood pH had been depressed to 6.67, the pressor response was 18 per cent of the control value (Chart 2). After pH had been elevated to 7.41, the pressor response increased to 40 per cent. The average mean pressure in ten dogs and the standard error of the mean is indicated within the bars of the graph. Similarly in the case of norepinephrine, responsiveness was 20 per cent of the control value at pH 6.67, and 30 per cent at pH 7.41 (Chart 3). Following injection of metaraminol at pH 6.67, responsiveness was 18 per cent and at pH 7.41 it was 41 per cent (Chart 4). Statistical analysis of these data indicates that the differences in pressor responsiveness during acidosis and at normal blood pH for all three agents were significant—the chances of accidental occurrence being less than 1 in 1,000.

In view of these findings in experimental animals, the value of correcting acidosis by infusion of a molar solution of lactate was studied at the bedside. Six patients who had coexisting bacteremic shock and acidosis were treated. All six had received large doses of norepinephrine or metaraminol before these studies, but in spite of this the mean arterial blood

## NOREPINEPHRINE (LEVOPHED)

1.0μg/kg

\* DOGS ON TOTAL CARDIAC BY-PASS



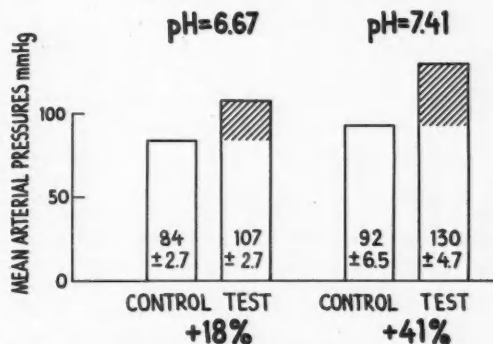
\* AVERAGE VALUES FOR 10 ANIMALS

Chart 3.—The effect of pH on pressor responsiveness to norepinephrine in dogs on total cardiac by-pass.

## METARAMINOL (ARAMINE)

22μg/kg

\* DOGS ON TOTAL CARDIAC BY-PASS



\* AVERAGE VALUES FOR 10 ANIMALS

Chart 4.—The effect of pH on pressor responsiveness to metaraminol in dogs on total cardiac by-pass.

pressure was 40 to 60 mm. of mercury. The pH of arterial blood before treatment was as low as 7.06. Following administration of 300 to 1,000 ml. of 1-molar sodium lactate by continuous intravenous infusion, the pH was elevated to a maximal value of 7.51. During and after this therapy the blood pressure returned to near the normal range even though the infusion of vasopressor agents was decreased or discontinued. However, none of the patients lived more than seven days in spite of this treatment. It was significant and gratifying that responsiveness to the vasopressor agents was restored by sodium lactate after the usual measures had failed.

In view of the limited accumulation of clinical experience on the use of 1-molar sodium lactate in

the treatment of shock, conclusions regarding its value and possible dangers involved in its employment must await additional observations. However, these studies have alerted us to close observation of the acid base status and early treatment of acidosis as one important facet in the management of patients with shock.

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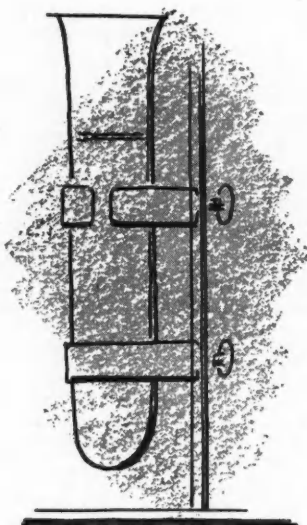
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# Treatment of Athletes

JAMES J. DALY, M.D., San Francisco

ATHLETES ARE ONE THING, mere participants in athletics quite another. An athlete is one who has better than average coordination and strength which enables him to surpass in his particular endeavor. He arrives at that station through a process of weeding out which has its beginning in the sandlots and develops on through high school and college. It is during the intermediate stage—high school—that the athlete comes into his own; and it is at this stage that the participant, struggling to make the team, is most likely to need the services of the team physician. He is perhaps less gifted physically and not gifted with that extra sense of timing or coordination that distinguishes the athlete.

The mere participant may be under some pressure to compete. Perhaps Dad played first string at good old Central High School in '26 and now has high hopes for his boy who at 16 years of age is three inches taller than Dad was at that age and tips the scales at 170. Son, however, takes after Mother, who is easy going, somewhat obese and definitely not the athletic type. He has a rather difficult task keeping up with the rest of the squad but, because of Dad's interest and enthusiasm, performs admirably considering his lack of inherent aptitude.

During football practice season the boy suffers numerous minor sprains and aches, all of which, because of the duration of symptoms, dismaying to the team trainer, require the services of the team physician. Unlike the athlete, this 16-year-old participant does not appear too unhappy to hear that he may miss the opening game because of injury.

These are the circumstances in which the coach and team physician should get together and evaluate the player as to his injury, his performance and his value to the squad. It is, of course, true that all young men should be given opportunity to participate in various forms of athletic endeavor, but to my mind it is a serious mistake to include football for boys without real aptitude. Football is rough and oftentimes dangerous, and a participant such as the one described, partaking in a game of body contact against a well-coordinated and determined athlete, may receive severe injuries such as torn ligaments or fractures.

I have taken care of athletic teams, both high

• Treating participants in athletics requires the coordination of coaches, trainers, administrators and physician. Often in cases of proneness to injury, a cause can be found and correction may be obtained by further training or withdrawal of the athlete from the team.

Certain types of injury should be always kept in mind in the examination of athletes, particularly football players. Ligamentous tears, myositis ossificans, navicular fracture and brain injury are injuries that may not be precisely diagnosed at the initial examination.

school and college, for over ten years and have found a higher incidence of serious injuries in high school boys than in college men. The reasons are many, but prominent among them are that there is a higher proportion of more gifted athletes in the college group; they have more experience in taking care of themselves in falling and blocking; they have better physical conditioning; and they are supplied with better protective equipment.

The greater incidence of injuries in the younger age group has been verified by many observers in this country and in Europe. Anderson and Holen of Norway<sup>1</sup> observed that the injury rate was highest among boys in the 17 to 19 year age group, and two of the factors stressed were incomplete training and a tendency to take chances that older competitors would avoid.

Athletes may have injuries of almost any type, from concussions to broken fingers. The treatment is adequately covered in any text or the various journals of orthopedics and neurology, but there are a few kinds of serious injury which predominate in body contact sports and are therefore of concern to the team physician, trainer and coach.

## The Knee

Ligamentous injuries to the knee are among the most common of the permanently incapacitating injuries received in football. The most often injured is the medial collateral and less often the cruciates and the lateral collateral. I have used the word *permanent* with regard to such incapacity because it is my belief that after repair of a collateral ligament the knee cannot endure the trauma one must expect in football.

Submitted January 24, 1958.

Unless injury of this kind is kept in mind, it may be overlooked during the examination of an injured knee. To make a correct diagnosis it is often necessary to carry out aspiration of fluid and manipulation under anesthesia, for, with the joint relaxed, what appeared at first as a slightly loose ligament may be observed to be a complete tear. Determining condition is important, for adequate treatment will save the youngster the trials of a "trick knee" the remainder of his life. In my experience best results are obtained by surgical repair of the ligaments and adequate immobilization. Often at operation the damage observed is far greater than might have been expected from minimal swelling and pain noted at preoperative examination.

Tearing of the ligaments of the knee usually is caused by a heavy blow from the side—as from the hurtling body of another player—while the cleats on the shoe hold the foot too firmly to the turf. Using shoes that would permit the foot to yield more to a blow might help.

Injury to the meniscus is of course prevalent but not nearly so serious. Early diagnosis of this injury is not so important as is that of a ligamentous tear.

#### **Myositis Ossificans**

Myositis ossificans is another frequently overlooked complication following what may at first appear to be a minor injury. It usually results from a blow on the thigh, often from a plastic helmet or a kick, followed by some stiffness and muscle tightness. The lesion progresses and does not respond to the usual measures aimed at resolving a "charlie horse." X-ray films in the week following injury show no abnormality. Subsequent films will show a periosteal reaction which often progresses into a large deposition of bone in the surrounding tissues. When this occurs, the player should be forbidden to play for the remainder of the season. I have seen repeated recurrences of symptoms following attempts to get back into condition before sufficient time has elapsed—not from blows to the injured area; merely running will cause a complete setback. The period of convalescence may vary from eight weeks to six months. I have seen a few very severe cases of myositis ossificans traumatica in which an athlete after six months' rest returned to play four years of professional ball with no trouble.

Weinstein, Fraerman and Levin,<sup>3</sup> in an excellent discussion of this condition, observed that it may be confused both radiologically and microscopically with osteogenic sarcoma. Sometimes trauma seems to be so slight a factor in the history of a case that it is not given much weight in differentiation.

#### **Navicular Fracture**

A diagnostic pitfall encountered in dealing with "wrist sprain" is navicular fracture. This injury is mentioned because it is sometimes not looked for. I remember one case in which the usual additional films taken two weeks following injury as a precaution against overlooking such a lesion were also negative for a fracture of the navicular; then, nine months later, an old fracture with nonunion was demonstrated. In this case symptoms were fortunately minimal; but the reverse is sometimes true.

Using the "straight arm"—that is, fending off a tackle, with a hand against his helmet while holding the elbow rigid—is frequently the cause of this fracture. Usually it necessitates the athlete's retiring for the remainder of the season. Some physicians will permit a player so injured to participate if he wears a small cast or leather-covered splint. It is difficult to evaluate the adverse effect on healing. Due to the unpredictable nature of this fracture, the physician may be inviting a legal as well as a medical complication.

#### **Head Injuries**

The most common injury to the head in football players, excluding fractures and lacerations about the face and nose, is concussion. It is a good policy, I believe, to forbid body contact scrimmage for at least a week to any athlete who has had a short period of unconsciousness from a blow on the head. Persistent headache often results from participation too soon after mild concussion. The period of restriction from strenuous activity and body contact should be determined by the severity of the initial blow and subsequent examination of the patient. It is difficult to lay down hard and fast rules governing the return to unrestricted participation following brain trauma, but it is well to keep decisions on the cautious side. In general, the length of time the patient is unconscious is in proportion to the severity of the trauma.

Some team physicians<sup>2</sup> suggest electroencephalograms before, during and after the sports season. This, of course, is rather impractical in large football squads but certainly should be considered in dealing with boxers and athletes with a history of concussion.

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# Management of Emotional Disturbances

## Use of Hydroxyzine (Atarax®) in General Practice

C. M. DOLAN, M.D., Hollywood

HYDROXYZINE is a p-chlorobenzhydryl piperazine derivative. The chemical structure is distinctly different from that of other tranquilizers. The hydrochloride of this compound is a crystalline solid, readily soluble in water and rapidly absorbed from the gastrointestinal tract. Recent pharmacological studies of the action of the drug in dogs gave evidence that hydroxyzine reduced the incidence and duration of ventricular arrhythmias,<sup>4</sup> and effectively antagonized and blocked the spasmogenic actions of acetylcholine, reserpine, serotonin, histamine and posterior pituitary extract on the duodenum. In addition, Sherrod and Bobb<sup>8</sup> in experiments on isolated ileum in rabbits, noted that hydroxyzine inhibited and blocked barium chloride-induced hypermotility.

Beneficial therapeutic effects in common anxiety and tension states,<sup>2,3,7</sup> in certain kinds of dermatosis that are affected by psychogenic stimuli<sup>6</sup> and in senile anxiety<sup>9</sup> were reported in the literature. No adverse effects on liver, blood, nervous system and urinary tract were observed.

The toxicity of hydroxyzine is low.<sup>5</sup> Although the usual dosage in adults is 25 mg. two or three times a day, one investigator observed that some pediatric patients, especially hyperkinetic children, may require 200 to 300 mg. daily.<sup>1</sup> He recommended that older children be started on 25 mg. tablets twice or three times daily, that the dose be increased until the therapeutic level was reached and that it then be decreased gradually. No obvious deleterious effects in pediatric patients receiving the drug for six months or more were observed.

### DOSAGE AND CLINICAL RESULTS

The clinical study of hydroxyzine here reported upon covered a series of 41 patients ranging in age from 19 to 76 years. Hydroxyzine was chosen because of its low toxicity and its therapeutic effectiveness in patients with anxiety and tension. Some patients also had organic disease.<sup>3,9</sup> The dosage in this study ranged from 10 mg. three times a day to 25 mg. four times a day. The therapeutic effects were carefully observed and the dosage was adjusted

• Forty-one patients with anxiety and tension or various conditions associated with neuroses were treated with hydroxyzine hydrochloride tablets. Of the 41 patients, eight had an excellent response, 14 a good response, 16 were improved and three responded poorly. The only side reaction in this series was temporary drowsiness which, in the majority of patients, ceased after therapy was steadily continued on the same dosage level.

upward or downward as indicated. Initial drowsiness was not considered a side reaction but as a sign of effective therapeutic response. If drowsiness persisted, however, the dosage was reduced. Most of the patients adjusted well to the schedule they started with, but in some cases the dose had to be increased. No correlation between the amount of hydroxyzine administered and the age or body weight was noted, which accords with Farah's<sup>3</sup> observation. Ayd<sup>1</sup> and Farah noted that children often required much higher doses than adults and that the dose had to be fitted to the patient in all cases. A summary of the results in patients with various diseases and of dosage schedules is given in Table 1.

### DISCUSSION

Although this study is preliminary and the series too small for results to be interpreted statistically, notes on the subjective responses of patients and on clinical impressions may help to illustrate the efficacy of hydroxyzine.

CASE 1. A 54-year-old waiter with anxiety and tension consulted us because of a tremor of the hands. He was especially embarrassed when, while he was serving customers, the cups rattled on the saucers. Taking one 10 mg. tablet of Atarax® three times a day improved the condition and the tremors subsided after three weeks of therapy.

CASE 2. A woman 62 years of age who for some time had been having a mild attack of bronchial asthma every 12 to 14 days reported that the attacks ceased after she began taking one 10 mg. tablet of Atarax four times a day. She was much less "nervous" and stated that she felt "so relaxed" under therapy that she forgot "little annoying things" soon

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TABLE 1.—Dosage Range and Results of Hydroxyzine Therapy in 41 Patients

Diagnosis	No. of Patients	Results				Dosage Range (Mg.)
		Excellent	Good	Improved	Poor	
Alcoholism.....	4	0	2	2	0	10 q.i.d. to 25 q.i.d.
Anxiety and tension.....	6	4	1	1	0	10 t.i.d. to 10 q.i.d.
Asthma.....	4	....	2	2	0	10 t.i.d. to 25 t.i.d.
Cardiac conditions.....	4	....	....	4	0	10 t.i.d. to 25 t.i.d.
"Colitis".....	2	1	1	0	0	10 t.i.d. to 10 q.i.d.
"Colitis" and menopause.....	1	....	....	....	1	25 t.i.d.
Epilepsy.....	1	0	0	1	0	25 t.i.d.
Hyperhidrosis.....	1	....	....	....	1	10 t.i.d.
Hypertension.....	2	....	1	1	0	10 q.i.d. to 25 t.i.d.
Hyperventilation.....	1	....	....	....	1	25 t.i.d.
Insomnia.....	4	....	3	1	0	10 t.i.d. to 25 b.i.d.
Menopausal syndrome.....	1	....	0	1	0	10 t.i.d.
Migraine.....	2	....	....	2	....	10 q.i.d. to 25 q.i.d.
Neurodermatitis.....	4	2	2	0	0	10 t.i.d. to 25 t.i.d.
Pre-menstrual tension and/or dysmenorrhea.....	3	....	2	1	0	10 t.i.d. to 25 t.i.d.
Tension headaches.....	1	1	....	0	0	10 t.i.d.
Total.....	41	8	14	16	3	

after they happened. Previously these trivialities aggravated her for days or even weeks.

Such ruminative thinking is characteristic in compulsive personalities. Alleviation of symptoms by hydroxyzine correlates with observed effects of this tranquilizer in obsessive-compulsive states.

CASE 3. A chronic alcoholic 60 years of age, who had cirrhosis of the liver, had considerable improvement in physical appearance and mental outlook while receiving hydroxyzine therapy, stated that his desire for alcohol had diminished and that he did not need phenobarbital which formerly he had taken for insomnia. There was less tremor and the patient had a general feeling of well-being.

CASE 4. A 36-year-old business executive with an acutely irritated colon reported that the frequency of stools decreased during treatment. Laboratory tests showed absence of mucus in the feces. Slight drowsiness which was noted at first disappeared as treatment—one 10 mg. tablet of hydroxyzine four times a day—continued. This was considered clinical evidence of the parasympatholytic property of hydroxyzine.

CASE 5. A woman 52 years of age with menopausal syndrome and hot flashes was given one 10 mg. tablet three times a day. One week after the beginning of therapy she said she was less nervous and that flashes occurred less frequently. In this patient, hydroxyzine apparently alleviated vasomotor instability.

CASE 6. A 39-year-old woman with premenstrual tension and dysmenorrhea of long standing was given one 10 mg. tablet of hydroxyzine three times a day, beginning a week before onset of menstruation; the drug was taken throughout menstruation and was discontinued one week after the flow had

ceased. The patient reported less tension and cramping than she had had previously.

CASE 7. A 36-year-old woman complained of "migraine headache," which she had had since age 14 and which became worse with premenstrual tension. The attacks occurred once or twice a week. She was given hydroxyzine, 10 mg. four times a day. Drowsiness was noted at first but it abated after three days of therapy. At last report, after six weeks of therapy, she had had no attacks. She said also that bowel movements, irregular before therapy, had become more regular.

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# CASE REPORTS

## Combined Intrauterine and Extrauterine Pregnancy

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COMBINED intrauterine and extrauterine pregnancy is rare. De Voe and Pratt<sup>1</sup> in 1948 were able to find only 395 cases reported in the literature to that date. In the case here reported there were confusing features which made early diagnosis difficult.

### CASE REPORT

The patient, a pregnant white woman 32 years of age with two children, had vaginal bleeding for two days some four weeks after the last menstrual period. The episode was not associated with cramps or abdominal pain. Two months later, on March 3, the patient had lower abdominal cramps with vaginal spotting which progressively became more severe. She consulted a physician, who put her in hospital. A fetus 2 inches long was protruding from the open cervical os. It was removed and curettage was done on March 7. The patient was discharged the following day despite moderately severe abdominal cramps. During the next 24 hours the abdominal pain became increasingly severe and was associated with subcostal and left shoulder pains, especially on deep inspiration. Nausea, vomiting and chills developed.

When examined by me for the first time in the evening of March 9, the patient was obviously acutely ill. The pulse rate was 100, respirations 36 per minute, blood pressure 90/50 mm. of mercury and the temperature 98.8°F. The skin was pale and dry. The patient said she had decided pain in the shoulders on inspiration. The lungs were clear to auscultation and percussion. Movements of the diaphragm was less than normal. The heart was normal in all respects. The abdomen was distended, with tenderness general but more pronounced in both lower quadrants. There was rebound tenderness, but no point tenderness, and bowel sounds were normal. A well-healed appendectomy scar was noted. Upon pelvic examination, decided bilateral adnexal tenderness was observed. There was no bulging of the cul-de-sac. The uterus could not be outlined because of pain. No bleeding was noted.

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It was felt that the patient had peritonitis secondary to a perforation of the uterus at the time of previous dilatation and curettage. She was put in the hospital. The hemoglobin content of the blood was 8.0 gm. per 100 cc. Leukocytes numbered 13,000 per cu. mm. with a shift to the left in the cell differential. No abnormality was noted in the urine. Roentgenographic examination of the abdomen did not reveal free air under the diaphragm. For medico-legal reasons a surgical consultant examined the patient. He concurred with the diagnosis.

The patient was given blood, intravenous fluids and antibiotics (streptomycin and penicillin) and was placed in Fowler's position. In the next few hours the patient's general condition improved and it was felt that surgical intervention was not indicated. By the next day the patient was considerably more comfortable. The respiratory rate was slower and the shoulder pain and abdominal distention were diminished. The abdominal tenderness was less but there was some suggestion of localization in the left lower quadrant. The patient was able to tolerate oral feedings, voided and had a spontaneous bowel movement. On March 13 a low-grade spiking temperature developed. On March 14 the hemoglobin content was 9.9 gm. per 100 cc. Erythrocytes numbered 3,120,000 per cu. mm. and leukocytes 7,000 per cu. mm. with a differential within normal limits. The sedimentation rate was 45 mm. in one hour (corrected).

Although the patient felt well in general, considerable tenderness continued in the left lower quadrant of the abdomen. Pelvic examination could not be carried out satisfactorily because the patient complained of too much pain on bimanual manipulation. Since it was felt that a pelvic abscess probably was developing, spot x-ray films were made over the left lower quadrant. No abnormality was shown in them.

The patient was discharged on March 18 with the admonition that she probably would need readmission later for drainage of an abscess. She was given a prescription of oxytetracyclin by mouth for one week. When the patient was next observed in the office on March 31 she still had discomfort in the left lower quadrant of the abdomen. There were no other complaints. The temperature was 98°F., the pulse rate 80 and blood pressure 120/70 mm. of mercury. There was considerable left lower abdominal tenderness on pressure and on rebound. Upon pelvic exam-

ination it was noted the cervix pointed posteriorly and the uterus was slightly enlarged and pushed to the right. The cervix and the uterus were tender to motion. No abnormality was noted in the right adnexa, but there was decided tenderness on the left side with a questionable 6 x 6 cm. mass palpable high in the left fornix. No cul-de-sac bulging was present. Dark blood oozed from the external os. A left ectopic pregnancy was considered the most likely diagnosis. A Friedman test was carried out and the result was reported as positive in 48 hours. Since it had been 17 days since the dilatation and curettage for incomplete abortion, it was felt that the test indicated additional extrauterine gestation.

The patient was readmitted to the hospital and on March 24 an exploratory laparotomy was done. A ruptured left tubal pregnancy was found and there was about 300 cc. of fresh and old blood in the peritoneal cavity. A left salpingo-oophorectomy was performed uneventfully. The patient tolerated the procedure well and the immediate postoperative course was uneventful. She was ambulatory in 24 hours, tolerated oral feedings and on the second postoperative day started to pass flatus. Sutures were removed on the sixth postoperative day and the patient was discharged March 31. That evening she complained of nausea and of being unable to keep anything on her stomach. No abnormality was observed on physical examination, however, and it was felt that the difficulty was probably of an emotional nature. But the patient's condition did not improve and on April 2, 36 hours after onset of nausea and vomiting, she began to complain of colicky abdominal pains. There had been no bowel movements or passage of flatus during the preceding 12 hours. The blood pressure was 120/70 mm. of mercury, the pulse rate 70 and the temperature 98.0°F. Slight abdominal distention was present and there was an ill-defined mass thought to be a loop of intestine palpable in the left upper quadrant. Borborygmi were heard. The patient was readmitted to the hospital with a diagnosis of mechanical intestinal obstruction. X-ray films of the abdomen and surgical consultation confirmed the impression. In an attempt to decompress the bowel, a Harris tube with mercury was introduced but it remained curled up in the stomach. The patient was carefully observed for the next 12 hours, and since no improvement was observed, exploratory laparotomy was carried out. An obstruction high in the small bowel due to kinking and adhesions was observed and was relieved easily after lysis of adhesions.

The postoperative course was entirely uneventful. Gastric suction and parenteral feedings were maintained for three days, at which time peristalsis returned to normal and the patient passed flatus. Oral feedings were begun then and were tolerated well. Retention sutures were removed on the sixth postoperative day and all other sutures on the eighth postoperative day. Patient was discharged, feeling well.

## SUMMARY

A case of combined intrauterine and extrauterine gestation is presented with the complicating features of possible uterine perforation and postoperative mechanical intestinal obstruction, necessitating laparotomy.

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## Acute Renal Tubular Failure

### *A Report of 2 Cases with an Unusual Mechanism Of Poisoning Due to Sodium Chlorate*

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ALTHOUGH poisoning with sodium chlorate or other like compounds is not unusual, the following cases are reported because of the rather unique mechanism of poisoning.

CASE 1. A 29-year-old Negro laborer, an employee of a trucking firm, was first seen on December 12, 1955. After spending an hour inside a large aluminum tank truck, cleaning the tank, he noted the onset of severe weakness, generalized numbness, headache, nausea, dizziness and excessive salivation. He climbed out of the tank and soon began to have severe cramping abdominal pains, chills, fever, pains in all four extremities and paresthesias of the hands and feet, and then vomited several times. The tank which he had been cleaning had recently been used to deliver a liquid mixture of 18.2 per cent sodium chlorate and 10 per cent sodium metaborate which is used by the Highway Department to destroy roadside weeds.

When examined the patient was acutely ill, dyspneic and cyanotic. He complained of generalized pains and chilliness. The blood pressure was 160 mm. of mercury systolic and 60 diastolic. The temperature was 102.2°F., the pulse rate 100 and respirations 28 per minute. Diffuse injection of the conjunctivae was noted. The pupils were in the mid-position and reacted to light and accommodation. No abnormality was observed in the ocular fundi. The tympanic membranes were rather dull and injected. The mouth and throat were normal. There was a well-healed scar in the right lower anterior chest from a previous accidental gunshot wound some five years earlier. No abnormalities were noted in the heart or lungs. The abdomen was rounded, soft and diffusely tender. The liver and spleen were not palpable. Rectal examination showed no abnormality. There was extreme weakness of all extremities.

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ties. The nail-beds were cyanotic. Tendon reflexes and the abdominal and cremasteric reflexes were intact and symmetrical. There was hypesthesia of the soles of both feet.

Erythrocytes numbered 2.42 million per cu. mm. and the hemoglobin content was 8.0 grams per 100 cc. Leukocytes numbered 16,900 per cu. mm.—68 per cent segmented neutrophils, 20 per cent non-segmented neutrophils, 11 per cent lymphocytes and 1 per cent monocytes. Occasional nucleated red blood cells were seen in the peripheral blood. Carbon dioxide combining power was 21.7 milliequivalents per liter. Cholinesterase activity was 0.366 pH per hour in the red blood cells (49 per cent of normal) and 0.77 pH per hour in the plasma (101 per cent of normal). The plasma was noted to be hemolyzed. The urine was dark amber with a specific gravity of 1.016. Results of tests for albumin and sugar were negative. There were two to five red blood cells and three to five white blood cells per high power field.

It was believed the patient had an acute hemolytic reaction due to sodium chlorate, and therefore large quantities of intravenous fluids, consisting of one-sixth molar sodium lactate, were administered to help prevent deposition of hemoglobin in the renal tubules; and sodium bicarbonate was given orally. Within six hours the erythrocyte count had fallen to 1.86 million per cu. mm. and the hematocrit was five volumes per cent. Blood transfusions were then given to maintain an adequate cell volume. Despite the large fluid intake, the total urinary output during the first 24 hours was 75 cc. and the urine soon became grossly bloody.

As soon as it was evident that renal failure had occurred, fluids were immediately restricted so that the total 24-hour intake was equivalent to the total amount of fluid lost (urine, emesis and stool) plus 700 cc. to compensate for the insensible perspiration. After the first 24 hours, the urinary output was nil and no urine was excreted at all except for 5 cc. of thick, syrupy, bloody fluid on the sixth hospital day. On the second hospital day, the erythrocytes numbered 2.7 million per cu. mm., the hematocrit was 12 volumes per cent, nonprotein nitrogen 85 mg. per 100 cc., creatinine content 5.3 mg. per 100 cc., serum sodium 136 milliequivalents per liter and potassium 4.1 milliequivalents per liter.

The patient continued to be moderately dyspneic despite supportive therapy and remained quite cyanotic although oxygen was administered. On the third hospital day the administration of 1 per cent methylene blue intravenously was attempted but was halted when severe chills occurred after only 1 cc. had been given. On the fourth hospital day the condition of the patient seemed to be deteriorating and the nonprotein nitrogen content was 140 mg. per 100 cc., creatinine 8.9 mg. per 100 cc., erythrocytes 3.82 million per cu. mm. and hematocrit 31 volumes per cent. Serial electrocardiograms taken during the hospitalization were all within normal limits except for tachycardia.

On the fourth hospital day, the patient's condition having deteriorated rapidly and there being no machine for hemodialysis available, an exchange transfusion was performed by simultaneous administration and removal of 6,000 cc. of fresh blood. The day after this procedure severe shock occurred which was controlled by continuous intravenous administration of L-arterenol (Levophed). The non-protein nitrogen content had risen to 177 mg. per 100 cc., the creatinine to 12.2 mg. per 100 cc. Serum sodium was 143 milliequivalents per liter and potassium 4.6 milliequivalents per liter. Erythrocytes numbered 4.12 million per cu. mm. and the hematocrit was 35 volumes per cent.

During the entire period of hospitalization the patient could retain very little nourishment taken by mouth, because of persistent vomiting. On the sixth hospital day he became acutely psychotic and unmanageable. On the seventh day the nonprotein nitrogen content was 258 mg. per 100 cc., creatinine 13.7 mg. per 100 cc., serum sodium 142 milliequivalents per liter and potassium 5.4 milliequivalents per liter. Erythrocytes numbered 3.20 million per cu. mm. and the hematocrit was 28 volumes per cent. At this time the liver was noted to be exquisitely tender and was palpable four finger-breadths below the right costal margin. The blood pressure was unobtainable despite the administration of Levophed, and the patient died on the seventh hospital day.

At postmortem examination, which was done by the coroner's office, the heart and lungs were observed to be grossly normal. The liver was moderately enlarged and had a peculiar reddish-brown color. There was a general bluish-green discoloration of the blood and of the gastrointestinal tract. The kidneys were swollen and appeared edematous. The cortices of the kidneys were not well demarcated. Cut surfaces of the medullary portion of the kidneys were dark red. No urine was found in the renal pelvis or in the bladder. Since the coroner's office was satisfied as to the cause of death, microscopic examination of tissues could not be obtained.

*Diagnosis:* Acute tubular renal failure due to intravenous hemolysis from sodium chlorate intoxication.

**CASE 2.** A 35-year-old white man, the employer of the patient in Case 1, was first observed December 12, 1955. After the patient in Case 1 became ill, he had entered the tank of the truck to finish cleaning it. After washing down the inside of the tank for about an hour, he noted the onset of numbness of the hands, severe weakness, dizziness, nausea and vomiting, severe abdominal and leg cramps, dyspnea, chills and fever. He was removed from the tank by other employees and was taken directly to the hospital.

Upon examination he was observed to be acutely ill, dyspneic and cyanotic. The blood pressure was 120/90 mm. of mercury, the temperature was 101.8° F., the pulse rate 88 and respirations 40 per minute. There was cyanosis of the face, lips and nail-beds.



The conjunctivae were diffusely injected and the pupils, which were round, regular and equal in size, were normally reactive to light. No abnormality of the fundi was observed. Except for cyanosis, the ears, nose, mouth and throat appeared normal. The lungs and heart were normal to percussion and auscultation. The abdomen was flat and there was exquisite mid-epigastric tenderness. The liver and spleen were not palpable. There was no weakness of the extremities and results of a neurological examination were within normal limits.

Erythrocytes numbered 4.33 million per cu. mm. and the hemoglobin content was 13.5 gms. per 100 cc. Leukocytes numbered 16,400 per cu. mm.—77 per cent segmented neutrophils, 3 per cent nonsegmented neutrophils, 19 per cent lymphocytes and 1 per cent eosinophils. Nucleated red blood cells were noted in the peripheral blood and there was considerable toxic granulation. Red blood cell cholinesterase activity was 0.8 pH per hour (106 per cent of normal) and plasma cholinesterase activity was 0.57 pH per hour (81 per cent of normal). The blood was noted to be hemolyzed. Carbon dioxide combining power was 23 milliequivalents per liter. A small amount of urine was obtained. It was dark red, had a specific gravity of 1.023, a 4 plus reaction for albumin. The sediment contained many degenerated red blood cells.

Since it was believed that the patient had an acute hemolytic reaction due to sodium chlorate intoxication, large amounts of one-sixth molar sodium lactate were given intravenously and large doses of sodium bicarbonate were given orally in order to alkalinize the urine. However, since the urinary output in the first 24 hours in the hospital was only 225 cc. despite a total fluid intake of 3,300 cc, it was evident that he also had acute renal tubular failure. The evening of admission the erythrocyte count had fallen to 3.03 million per cu. mm. and the hematocrit was 25 volumes per cent. The nonprotein nitrogen content was 76 mg. per 100 cc. and creatinine content 3.9 mg. per 100 cc. As soon as it became evident that renal tubular failure was present, intake of fluids was restricted to the amount lost in the urine, vomitus and stools each 24 hours, plus 700 cc. to balance insensible loss. The patient was permitted to drink 20 per cent lactose solution in order to help prevent catabolism of body protein. The hematocrit fell to 15 volumes per cent on the third hospital day and blood transfusions had to be given, but they were limited to packed red cells. Fluids given by vein consisted of 20 per cent glucose in distilled water, to which was added regular insulin in order to keep the serum potassium at near normal levels.

The total urinary output during the first 24 hours was 225 cc., and then each succeeding 24 hours was 300 cc., 350 cc., 390 cc., 240 cc., 80 cc. and 30 cc. The specific gravity of the urine decreased to 1.012 by the fourth hospital day. On the seventh hospital day the urine became light colored and the sediment contained only 15 to 20 white blood cells and 20 to 25 red blood cells per high power field. However

there was a progressive rise in the nonprotein nitrogen and creatinine content of the blood: On the seventh hospital day erythrocytes numbered 3.83 million per cu. mm., the hematocrit was 35 volumes per cent, nonprotein nitrogen content was 252 mg. per 100 cc., creatinine 11.4 mg. per 100 cc., serum sodium 142 milliequivalents per liter and potassium 5.3 milliequivalents per liter. The following day the nonprotein nitrogen rose to 270 mg. per 100 cc. and the creatinine to 14.3 mg. per 100 cc., while the serum sodium and potassium remained relatively unchanged at 142 and 5.0 milliequivalents per liter respectively. Since the other patient had just died and the patient in the present case began to show irritability, irrational behavior and generalized tremors, his family requested that means for hemodialysis be obtained.

He was therefore transferred to the Los Angeles County General Hospital where an artificial kidney was available, and during the next 20 days hemodialysis was performed on three occasions, each time reducing the nonprotein nitrogen and creatinine levels by 50 per cent, and each time with clinical improvement. After the fourteenth day the urinary output gradually rose, reaching a maximum output of 1,000 cc. daily. After the third hemodialysis, acute staphylococcal septicemia developed. The patient appeared to be recovering from the infection when he died rather suddenly on the 28th day of illness.

At postmortem examination by the Los Angeles County coroner's office, bilateral pulmonary edema, moderate congestion of the spleen and congestion of the liver were noted. Both kidneys were large and pale. The right kidney weighed 250 grams and the left 280 grams. Cut surfaces were pale and showed poor demarcation between the cortical and the medullary areas. The ureters were of normal caliber. There was some mucosal injection of the bladder. Microscopic examination of the lungs showed many alveoli to contain precipitated protein and scattered foci of erythrocytes and neutrophils. Sections of the kidneys showed a reddish-brown precipitate in many of the tubules, and a few tubules contained blue granules resembling calcium. Some of the tubular cells contained large vacuoles, and scattered foci of lymphocytes or neutrophils were seen in the interstitial tissues. The liver showed chronic passive congestion.

**Diagnosis:** (1) Uremic pneumonitis. (2) Hemoglobinuric nephrosis. (3) Chronic passive congestion of the liver.

#### DISCUSSION

The material which these two patients came in contact with consisted of a solution of 18.2 per cent sodium chlorate and 10 per cent sodium metaborate. Sodium chlorate is a powerful oxidizing agent which causes acute hemolysis with abdominal pain, vomiting, dyspnea, cyanosis, headache, weakness, restlessness, shock, methemoglobinemia and renal failure secondary to precipitation of hemoglobin in

the renal tubules.<sup>1,5</sup> Fatty degeneration of the liver also may occur. Boron compounds also can be quite toxic and can cause gastrointestinal symptoms and necrosis of the gastrointestinal tract and renal tubular epithelium.<sup>1,5</sup>

In the present cases the mechanism of poisoning was confusing at first, since the first patient had performed a similar task on many previous occasions and had come into repeated contact with this solution without symptoms. However, it was learned that two unfortunate circumstances had occurred. First, all previous deliveries of this material had been made in a steel tank, whereas on this occasion the material was carried in an aluminum tank. Second, just before it was used for transporting the chlorate-metaborate mixture, the tank had been used for a load of cottonseed oil. Upon analysis of the residue in this tank after the two patients became ill, it was found that there was a residue of cottonseed oil in addition to the chlorate-metaborate mixture. Upon experiment it was noted that the chlorate-metaborate mixture, which was quite alkaline, released hydrogen gas when in contact with aluminum, but not when in contact with steel. Also, the alkaline mixture converted the cottonseed oil into cottonseed soap, so that the hydrogen, bubbling through this mixture while the inside of the tank was being washed down with a jet of water, had filled the tank with soap bubbles which contained a high concentration of the chlorate-metaborate mixture. Hence large quantities of vapors of these toxic materials were probably present for inhalation. It is quite likely that if the materials had been contained in a steel tank and there had been no cottonseed oil residue, the poisoning would not have occurred, for the material had been handled safely in the past.

Many terms have been used to describe acute renal failure of the type that follows shock, anoxia, hemorrhage, trauma, burns, fluid loss and various kinds of poisonings<sup>7,9</sup>—"crush syndrome," "lower nephron nephrosis," "acute tubular necrosis," and "acute tubular nephrosis," to mention a few. Moon<sup>3</sup> expressed the opinion that *acute tubular nephrosis* describes clearly the most constant and characteristic feature, which is acute degeneration of the tubular epithelium. The term *lower nephron nephrosis* has generally been discarded, for the tubular degeneration involves the entire tubule from the proximal convoluted tubule to the collecting system. Using microdissection, Oliver<sup>4</sup> observed that two different types of tubular damage can be found, the proximal convoluted tubule showing the most extensive damage when the injury is due to a toxic material, since this portion is the principal absorbing segment of the nephron, and the remaining portions of the tubule showing disruptive tubulorrhexis with loss of the basement membrane when the damage is due to shock and anoxia.

Until about ten years ago, treatment of acute renal tubular failure in many instances consisted of administration of large amounts of parenteral fluids in an attempt to force urinary output.<sup>2,8</sup> Most of the

patients so treated died in a pulmonary edema since the severely damaged tubular epithelium would allow unselective reabsorption of glomerular filtrate into the circulation, and anuria persisted despite administration of fluids. Another drastic measure (renal decapsulation) was of no value and has no logical basis for use.<sup>2</sup>

Since a better understanding of fluid and electrolyte balance and protein metabolism has been reached in the past ten years, a proper method of conservative management of patients with acute renal tubular failure has evolved. It has been found that spontaneous diuresis and recovery will occur before the nineteenth day of oliguria in many patients if they can be tided over the critical anuric and oliguric phase.<sup>7</sup> In order to prevent death from pulmonary edema, fluids are given only to replace the amount of fluids lost in the urine, vomitus or feces, plus approximately 700 cc. each 24 hours to replace the loss from insensible perspiration. In order to keep nitrogen and potassium retention to a minimum during the anuric phase, carbohydrate in the amount of at least 100 gm. per day is given by mouth or vein to help prevent protein catabolism. Administration of over 100 gm. per day in the normal human does not increase the protein-sparing action. One of the dangers of acute renal tubular failure is death from hyperkalemia and this usually can be prevented by restriction of protein intake, administration of carbohydrates, administration of insulin and glucose simultaneously to deposit glycogen and potassium in the muscles, and the use of ammonium carboxylic acid resin orally to reduce the potassium levels. There is some evidence that hyponatremia and acidosis aggravate the toxic effect of hyperkalemia and that if these conditions are present death may occur from potassium levels which are only slightly elevated.<sup>8</sup> Sodium intake is usually restricted but it may have to be given if hyponatremia occurs. In most patients diuresis will occur spontaneously between the tenth and nineteenth days, and when it does, large amounts of fluid and electrolytes may have to be administered to replace the amount lost.

Using such conservative therapy, Stock<sup>8</sup> reported an increase in survival rate from 50 per cent to 80 per cent. In some patients treated conservatively, nitrogen and potassium retention may rise to dangerous levels, and this may be temporarily alleviated by use of some kind of dialyzing mechanism. Gastric or intestinal lavage is tedious and difficult to control. The same can be said of exsanguinating transfusions and intraperitoneal dialysis. With the use of an improved artificial kidney,<sup>6</sup> some patients may be tided over the critical period until spontaneous tubular regeneration occurs. In the first case presented herein, exsanguinating transfusions were performed because of the obviously hopeless situation and the fact that the patient was too ill to be transported to another city for hemodialysis. The life of the second patient was obviously prolonged by hemodialysis, but in view of the fact that the total urinary output

never rose above 1,000 cc. a day, the patient evidently had renal damage so severe that he could not have lived. It is a possibility in both of these cases that the boron compound caused some additional renal injury.

#### SUMMARY

An interesting and unusual mechanism of poisoning with sodium chlorate in two patients, resulting in severe fatal acute tubular renal failure, has been presented.

1310 Olive Avenue, Fresno.

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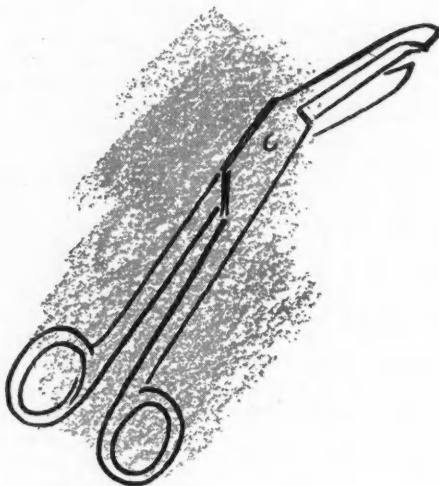
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# California MEDICINE

For information on preparation of manuscript, see advertising page 2

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## EDITORIAL

### *Welcome, A.M.A.*

WHEN THE American Medical Association calls its 1958 Annual Session to order in San Francisco on June 23, the occasion will mark the fifth time in the past 20 years that California has been honored with this great meeting.

The A.M.A. held its annual sessions of 1946, 1950 and 1954 in San Francisco. On another occasion it was welcomed to Los Angeles for a clinical session.

The demands of the A.M.A. for accommodations of all types are so vast that only a few cities in the United States feel they can adequately supply the needs. San Francisco is one of the favored few and it is honored with this, the greatest of all medical meetings.

While not even the most enthusiastic Californian

could guarantee ideal weather for this session, experience has been that the A.M.A. is treated extremely well in this regard. Blue skies, ample sunshine and absence of both excessive heat and humidity should be the rule.

And, while all hotel accommodations may not be de luxe, the spirit of the friendly landlord will prevail. Meanwhile, the cable cars will clang, the sidewalk flower stands will send out their advertising perfume, Fisherman's Wharf will offer its delicacies and the Top O' The Mark will draw its enchanted visitors.

To all A.M.A. visitors, a warm greeting. Welcome to California and the City by the Golden Gate. May your visit be both pleasant and productive!

### **C.M.A. Annual Session, 1958**

ANOTHER Annual Session of the California Medical Association was concluded the final day of April and the immediate reactions indicate a high level of satisfaction in all departments.

Scientific programs were presented by all 18 scientific sections of the Association, augmented by three postgraduate courses planned and staged by the three medical schools in the Los Angeles area. Medical motion pictures on a broad and varied scale rounded out the scientific presentations.

Technical exhibits—in modern parlance, industrial exhibits—occupied a large area on the ground floor of the Ambassador Hotel in Los Angeles and commanded the attention of a large number of physicians.

Business meetings of the House of Delegates took

two full days, separated by two days of committee meetings and hearings.

On the scientific side, the section and general meetings drew better than average audiences and encompassed a broad range of medical and surgical subjects. Aided by five guest speakers of national repute, the scientific part of the program produced many papers which will provide interesting and stimulating reading in these pages in the coming months.

Postgraduate courses at an Annual Session were inaugurated this year, each designed to offer a symposium on a single topic or field of medical or surgical practice. Subjects covered included liver diseases, abdominal pain and the management of trauma. Registration fees were charged for these courses—the first instance of the Association's plac-



ing a charge on any of its annual meetings—and credit for attendance was granted by national and state accreditation organizations, notably general practitioner groups.

While registration at these postgraduate courses did not meet some early predictions, the attendance did represent a good cross-section of the profession in California and gave a sound basis for evaluating the worth of such postgraduate instruction at future C.M.A. meetings.

While scientific sessions occupied the attention of the major group of physician participants at the meeting, the business side of the California Medical Association was adequately and avidly followed by the smaller number who comprise the House of Delegates. Here, business was enacted on a scale never before seen in the C.M.A. Where in 1957 there were some thirty resolutions presented for discussion, this year there were 72. In addition, there were four proposed amendments to the Constitution and 17 to the By-Laws introduced.

Office staff members were hard put to duplicate all this business so that each member of the House of Delegates could have his own copies for his own consideration and discussion with others. File folders prepared to handle this volume of work were provided, so that members of the House could keep their papers together and in their own preference of working order.

Held over from 1957, an amendment to the Constitution to provide for proportional representation on the Council was adopted by the House of Delegates by an overwhelming majority. This means the elimination of the former office of Councilor-at-Large and the substitution of proportional representation on the Council by Councilor Districts. Under this setup, Los Angeles County now has six Councilors, each elected by the Delegates in his own county. The remaining Councilor Districts are represented by one Councilor each. This arrangement has reduced the size of the Council by two members, from 17 to 15 elected Councilors. In addition, the President, President-Elect, Speaker and Vice-Speaker continue on the Council as full voting members and the Secretary and Editor serve ex-officio without a vote.

The House of Delegates voted down a proposal brought by the Constitution Study Committee to reduce the size of the House of Delegates to about one-half its present strength. Opposition to this proposal came from many sides, some representing smaller county societies which did not want a decrease in representation and some from larger groups which felt that the House of Delegates was a valuable instrument of communications and should be continued on its present scale.

Adopted by the House were a series of amendments to the By-Laws offered by the Council as a result of the study of the C.M.A. structure made in the past year by Robert Heller & Associates of Cleveland. The changes effected by these amendments were technical in some instances and more substantive in others, but the net effect is to streamline the operations of the Association and strengthen its lines of operations and communications.

Elections held by the House of Delegates in its final session elevated Doctor T. Eric Reynolds of Oakland to the post of President-Elect by acclamation. In this position he succeeds Doctor Francis E. West of San Diego, who was installed as President in closing ceremonies of the meeting.

Other elections saw Doctor James C. Doyle reelected Speaker of the House of Delegates and Doctor Ivan C. Heron named as Vice-Speaker, a post vacated by Doctor J. Norman O'Neill, who was elected a Councilor from Los Angeles County.

Doctors James C. MacLaggan of San Diego and Warren L. Bostick of San Rafael were reelected to the Council by their respective districts, while Los Angeles County renamed Doctors Paul D. Foster and Arthur A. Kirchner, as well as Doctor J. Norman O'Neill as Councilors and added Doctors Malcolm Todd, Joseph P. O'Connor and Gerald W. Shaw as new Councilors.

Incumbent Delegates to the American Medical Association were all reelected and Doctor Donald A. Charnock of Los Angeles was elected as the additional Delegate added this year by the growth of the Association. Doctor James C. Doyle was elected to fill the unexpired term of Doctor Charnock as Alternate Delegate to the A.M.A. and was also named for an additional two-year term. Doctor Ralph C. Teall of Sacramento was named as another Alternate Delegate to the A.M.A., succeeding Doctor Edward C. Rosenow, Jr., who retired from this post, and Doctor Carl M. Hadley of San Bernardino was named as Alternate to Doctor Charnock for the newly created Delegate spot.

Actions of the House of Delegates will be published in the forthcoming issue of CALIFORNIA MEDICINE and some of the papers from the scientific meetings will appear in future issues.

All in all, the 1958 Annual Session should be recorded as one of the most successful, as well as the busiest, in the history of the Association. When a large group of Delegates, 355 in all, can come to prompt and adequate solutions for a wide variety of problems, and do so with a minimum of bickering, California's medical organization appears to be in good hands, well under control and ready to face whatever problems may be presented.

# California MEDICAL ASSOCIATION

## NOTICES & REPORTS

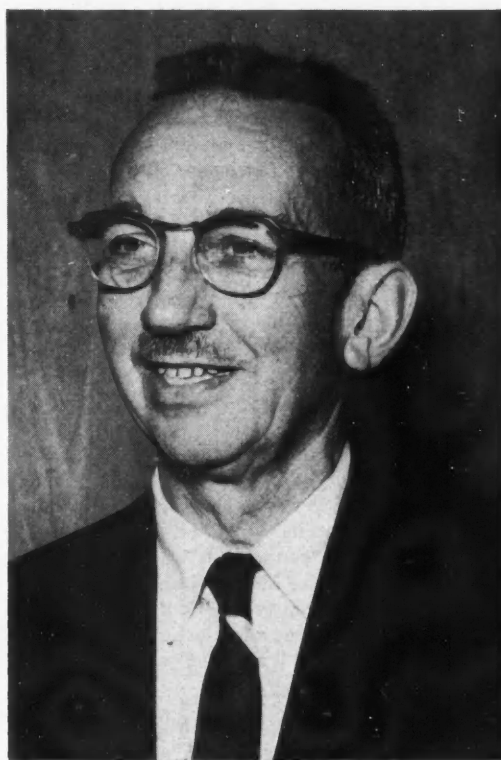
### The President-Elect

T. ERIC REYNOLDS, M.D., President-Elect of the California Medical Association, enters that high office with a background of training and experience which will make him a most able leader.

He was born in 1896, at White Plains, New York. He received the degree of M.A. from the University of California and in 1925 was graduated from the University of California School of Medicine. He has practiced medicine in Oakland and the Eastbay Area since 1926. From 1928 to 1940 he was a part-time faculty member in the Department of Pharmacology at the University of California. He is a member of the American College of Surgeons and of the American Academy of General Practice.

During World War I Dr. Reynolds was a line officer in the U. S. Navy. During World War II he was Chief of Surgery, U.S.N. Hospital, New Hebrides, and served on Admiral Halsey's staff in the South Pacific for a year. He was Chief of Surgery and Executive Officer, U.S.N. Hospital, Fort Eustis, Virginia, and was designated Commanding Officer, U.S.N. Hospital, staging to the Far East at the time of the Japanese surrender. Before the war ended, he had risen to the rank of Captain, U.S.N.R.

Active in organized medicine, Dr. Reynolds has served on the Council and as President of the Alameda-Contra Costa Medical Association. He has served on the Council of the California Medical Association for five years and has been on the Board of Trustees of California Physicians' Service for ten years. For six years he was an elected trustee of C.P.S. and for two years has been acting as president of C.P.S. and more recently as chairman of the Board of Trustees. He is a commissioner of the National Blue Shield, representing the Eleventh District, composed of those states west of the Rocky Mountains, and Hawaii. He is a director of Medical Indemnity of America.



T. ERIC REYNOLDS, M.D.

Dr. Reynolds is married and has a daughter and a son. He lives in Piedmont, and with his wife Laurel is greatly interested in wild-life. He is a member of and has served in official capacity with national, state and local Audubon societies.

"Rick" Reynolds brings a wealth of ability and experience to the office of President-Elect, and in his quiet, tireless and friendly way will be one of its finest and most devoted leaders.

## Council Meeting Minutes

### 433rd Meeting

*Tentative Draft: Minutes of the 433rd Meeting of the Council, Sacramento, El Rancho Hotel, April 12, 1958.*

The meeting was called to order by Chairman Lum in the Patio Room of the El Rancho Hotel, West Sacramento, California, on Saturday, April 12, 1958, at 9:30 a.m.

#### Roll Call:

Present were President MacDonald, President-Elect West, Secretary-Treasurer Daniels, Editor Wilbur, Speaker Doyle, Vice-Speaker O'Neill, and Councilors MacLaggan, Wheeler, Wadsworth, Pearman, Harrington, McPharlin, Sherman, Lum, Bostick, Teall, Kirchner, Reynolds, Varden, Heron, Rosenow, and Hoyt.

Absent for cause, Councilor Foster.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Gillette and Whelan of C.M.A. staff; Doctor Walter E. Batchelder, medical director of the Cancer Commission; Messrs. Hassard and Huber of legal counsel; county society executives Scheuber of Alameda-Contra Costa County, Geisert of Kern, Field of Los Angeles, Bannister of Orange, Foster of Sacramento, Nute of San Diego, Neick of San Francisco, Thompson of San Joaquin, Donovan and Colvin of Santa Clara; Eugene Salisbury of the Public Health League of California; Doctor Marshall Porter, Director of the California State Department of Mental Hygiene; Doctors A. E. Larsen and William Gardenier and Messrs. Etchel Paolini, Richard Lyon and Wilson Wahlberg of California Physicians' Service; Doctors Carl E. Horn, William F. B. Harding, G. A. Fricker, Eugene G. Tainter, Abe B. Berman and Dave F. Dozier of the Sacramento Society for Medical Improvement; Doctor John Keye, medical director of the State Department of Social Welfare; and Doctors Carl M. Hadley, Dan O. Kilroy and Wayne Pollock.

#### 1. Minutes for Approval:

On motion duly made and seconded, minutes of the 432nd meeting of the Council, held March 9, 1958, were approved.

#### 2. Membership:

(a) A report of membership as of April 10 was presented and ordered filed.

(b) On motion duly made and seconded, 101 delinquent members whose dues had been received, were voted reinstatement.

(c) On motion duly made and seconded in each instance, two members were voted Retired Membership. These were: A. E. Kiser, Napa County and Milton B. Lennon, San Francisco County.

(d) On motion duly made and seconded in each instance, 22 applicants were voted Associate Membership. These were: Rey L. Cardon, Charles H. Gallup, Livia Ross, Henry Santina, A. D. Schwartz, Alameda-Contra Costa County; H. S. Hendrickson, Los Angeles County; C. S. Small, San Bernardino County; Andre M. Burnier, San Diego County; I. S. Edelman, John J. Hutchings, Samuel T. Merenberg, Glenroy N. Pierce, Edward F. Slaten, D. Allen Treat, San Francisco County; Holden Brink, Neil Flaherty, W. Mary Riggs, Santa Clara County; George I. Scheetz, Solano County; James Fluvog, William M. O'Brien, Stanislaus County; Philip R. A. May, A. M. Seron, Ventura County.

(e) On motion duly made and seconded in each instance, reductions of dues were voted for seven members because of illness or postgraduate study.

(f) On motion duly made and seconded, it was voted that the Council should nominate for Honorary Membership, Doctor Edith Myers of Alameda-Contra Costa Medical Association.

#### 3. Financial:

(a) A report of bank balances as of April 10, 1958, was presented and ordered filed.

(b) A report of income and expenditures for March and the nine months ended March 31, 1958, was presented and ordered filed.

(c) Doctor Heron, chairman of the Auditing Committee, presented a budget proposed by that committee for the 1958-1959 fiscal year. Following the adoption of several amendments, this proposed budget was approved for presentation to the 1958 House of Delegates.

#### 4. Supplemental Report of the Council:

Consideration was given to a draft of a supplemental report of the Council to be given to the House of Delegates. On motion duly made and seconded, it was voted to appoint a committee of the Council to draft a proposed recommendation by the Council on the matter of fee schedules. The chairman appointed Doctors Wadsworth, Pearman, Sherman, West and Teall to this committee. It was agreed that the supplemental report be brought before the next meeting of the Council, April 26, 1958.

#### 5. Commission on Public Health and Public Agencies:

Chairman Bostick of the Commission on Public Health and Public Agencies, reviewed some of the considerations involved in current rehabilitation programs and urged that the Council and the county societies give earnest thought to this program.

#### 6. Woman's Auxiliary to the C.M.A.:

On motion duly made and seconded, in response to a request from the Woman's Auxiliary, it was

voted to appoint Doctors Frank A. MacDonald and E. Vincent Askey to the Advisory Board to the Woman's Auxiliary for the 1958-1959 year.

#### 7. *Committee on Postgraduate Activities:*

Doctor Rosenow reviewed registration statistics at postgraduate courses in the past three years, pointing out that 1,530 new registrants listed as general practitioners had registered in the three-year period, or an estimated 66 per cent of all general practitioners outside the Los Angeles, San Francisco and San Diego areas.

#### 8. *Medical Review and Advisory Board:*

Chairman Carl M. Hadley of the Medical Review and Advisory Board reported that the hospital studies undertaken by the board were nearing completion, that jury studies have been completed and that copies of the Patient Attitude Test would be distributed to all Association members. He also commented on the budget prepared by the Board for the 1958-1959 fiscal year. On motion duly made and seconded, it was voted to accept this report, with the provision that no additional research projects be undertaken at this time but that consultation services at a rate of \$100 daily plus expenses be authorized as required, in accordance with provision made in the proposed budget.

Mr. Hassard reported that the indoctrination material for members of medical panels had been assembled and was currently being checked.

On motion duly made and seconded, it was voted that the Board should request Dr. Blum to prepare a series of questions to be used by the San Francisco Medical Society, under the terms of his present retainer arrangement.

#### 9. *Committee on Legislation:*

Chairman Dan O. Kilroy of the Committee on Legislation reported on current activities of the committee and presented a proposed statement to be made before the Senate Interim Committee on Public Health on the subject of cancer control legislation. On motion duly made and seconded, this statement was approved.

Doctor Kilroy also reported on the inauguration of a legislative news letter now being sent to county society officers and others.

Mr. Clancy reported that a speech in opposition to HR 9467 had been prepared and sent to all county societies for their use if desired. He also reported that the Association had received an award for its public relations exhibit presented at the recent meeting of the American Public Relations Association.

On motion duly made and seconded, it was voted to invite the two principal candidates for Governor of California to appear before the 1958 House of Delegates.

#### 10. *Public Welfare Assistance Law:*

Chairman Harrington of the liaison committee with the State Department of Social Welfare reported that the pilot program in four counties, to eliminate the need of prior authorization in treating welfare cases had been started and was under observation. Mr. Hassard briefed the federal and state laws governing this program and Doctor John Keye, medical director of the State Department of Social Welfare, commented on the program. Doctors Walter H. Brignoli of Napa County and Byron L. Gifford of Santa Barbara County made statements of the position of their respective county societies on the program.

#### 11. *California Medicine:*

Editor Dwight L. Wilbur outlined a questionnaire which he proposed be sent to about 10 per cent of the Association's members, to determine their views on CALIFORNIA MEDICINE. On motion duly made and seconded, it was voted to approve the approximate \$250 cost of this study.

#### 12. *State Department of Mental Hygiene:*

Doctor Marshall Porter, Director of the State Department of Mental Hygiene, reported that legislative support had not developed for his department's recommendation that mental hygiene clinics now supported solely by the state be converted into community clinics under joint community-state support. He also reported the belief of the department that narcotics addicts be treated in their own communities as community problems and not sent to state hospitals where proper treatment facilities are not available.

Chairman Lum read a letter received from Doctor Sidney J. Shipman, in which he urged that additional funds be provided for drugs for the treatment of tuberculous patients in state hospitals. Doctor Porter agreed to confer with Doctor Shipman on this matter.

#### 13. *Legal Department:*

Mr. Hassard reported that a court has decided that a district hospital constructed with public funds, has the right to deny staff membership to a physician deemed unsuited for such membership. This is the first case on record involving a district hospital in California.

Mr. Hassard also reported that a physician in Fresno had filed suit against the officers of a hospital staff because of their failure to recommend his reappointment as a staff member. This suit is based on libel and slander.

#### 14. *California Physicians' Service:*

Doctor T. Eric Reynolds, chairman of the Board of Trustees of California Physicians' Service, re-



ported that membership now totals 786,672 and that current operations are running with a surplus, a reversal of the trend of the past year.

Doctor Reynolds also reported that a proposal in the 1957 House of Delegates, to supply members with plastic identification cards, had been investigated and found impractical because of an extremely high cost.

#### 15. Los Angeles County Medical Association:

Doctor Rosenow reported that the Los Angeles County Medical Association had agreed to review public welfare assistance cases for nonmembers of that association as well as members. He suggested the advisability of similar action being taken statewide.

#### 16. 1958 House of Delegates:

Speaker Doyle of the House of Delegates requested all District Councilors to ascertain from the chairman of their delegations the time and place of caucuses planned during the Annual Session.

Doctor Doyle also requested permission to change the order of business at the second session of the House of Delegates, so that consideration would be given to proposed By-Laws amendments prior to the election of officers and other representatives. On motion duly made and seconded, this change was approved.

#### 17. Travel Insurance for Councilors:

On motion duly made and seconded, the Committee on Insurance was requested to look into the coverage and cost of travel accident insurance to cover officers and Councilors while engaged in official business for the Association.

#### 18. Time and Place of Next Meeting:

It was agreed that the next meeting of the Council would be held in the Ambassador Hotel, Los Angeles, starting at 9:30 a.m., Saturday, April 26, 1958.

#### Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:25 p.m. out of the memory of Doctor Axel E. Anderson of Fresno, former member of the Council and since 1940 chairman of benevolence activities of the Association, who died in Pasadena on April 11, 1958. The executive secretary was instructed to advise Doctor Anderson's son and daughter to this effect and notify them that the Council proposed to make an additional contribution to Physicians' Benevolence Fund., Inc., in memory of Doctor Anderson.

DONALD D. LUM, M.D., *Chairman*

ALBERT C. DANIELS, M.D., *Secretary*

### 434th Meeting

*Tentative Draft: Minutes of the 434th Meeting of the Council, Los Angeles, Ambassador Hotel, April 26 to 30, 1958.*

The meeting was called to order by Chairman Lum in the Colonial Room of the Ambassador Hotel, Los Angeles, on Saturday, April 26, 1958, at 9:30 a.m.

#### Roll Call:

Present were President MacDonald, President-Elect West, Secretary Daniels, Speaker Doyle, Vice-Speaker O'Neill and Councilors MacLaggan, Wheeler, Foster, Wadsworth, Pearman, Harrington, McPharlin, Sherman, Lum, Bostick, Teall, Kirchner, Reynolds, Varden, Heron, Rosenow and Hoyt.

Absent for cause, Editor Wilbur.

A quorum present and acting.

Present by invitation during all or a part of the meeting were Messrs. Hunton, Thomas, Clancy, Gillette, Whelan and Collins and Dr. Batchelder of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Messrs. Read and Salisbury of the Public Health League of California; county society executives Scheuber of Alameda-Contra Costa, Jensen of Fresno, Geisert of Kern, Field of Los Angeles, Bannister of Orange, Marvin of Riverside, Foster of Sacramento, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Thompson and Pearce of San Joaquin, Wood of San Mateo, Donovan and Colvin of Santa Clara; Messrs. Wahlberg, Virello, Paolini and Lyon and Drs. Larsen and Gardenier of California Physicians' Service; Doctor Marshall Porter, State Director of Mental Hygiene; Doctor Malcolm Merrill, State Director of Public Health; William Rogers of the California Academy of General Practice; Doctors Thomas Elmendorf, Burt Davis, Carl M. Hadley, John W. Cline, Dwight H. Murray, J. E. Feldmayer, Frederic S. Ewens, Carl E. Horn, Abraham Sirbu, Dan O. Kilroy, Marden E. Alsberge, H. G. MacLean, J. B. Price, Leon Desimone and others.

#### 1. Minutes for Approval:

On motion duly made and seconded, minutes of the 433rd meeting of the Council, held April 12, 1958, were approved.

#### 2. Membership:

(a) A report of membership as of April 22, 1958, was presented and ordered filed.

(b) On motion duly made and seconded, 561 members who had become delinquent and had subsequently paid their dues were voted reinstatement.

(c) On motion duly made and seconded in each

instance ten applicants were voted Associate Membership. These were: Muriel J. Ellis, J. R. Goldsmith, Alameda-Contra Costa County; Frank M. Hirose, Paul A. L. Haber, Marianne Hessel, Bernard Kordan, Donald J. Lauber, Clark D. Ryan, Los Angeles County; Enos P. Cook, Santa Clara County; J. I. Porter, Solano County.

(d) On motion duly made and seconded in each instance, two applicants were voted Retired Membership. These were: Clifford Kuh, Alameda-Contra Costa County, and Albert M. Vollmer, San Francisco County.

(e) On motion duly made and seconded in each instance, five applicants were voted a reduction of dues because of illness or postgraduate study.

### 3. *Financial:*

A report of bank balances and other current items as of April 22, 1958, was presented and ordered filed.

### 4. *Supplemental Report of the Council:*

Councilor Teall presented a proposed preamble to the Supplemental Report of the Council, Councilor Wadsworth read the report of a special committee to consider the question of fees and negotiations, and President West read a statement which had previously been discussed by the Council.

After discussion, it was regularly moved, seconded and voted to introduce into the House of Delegates a resolution prepared by Doctor Wadsworth's committee, to be followed by the statement presented by Doctor West.

### 5. *Commission on Public Health and Public Agencies:*

Doctor Bostick reported on a meeting of the Advisory Committee to the Crippled Children's Services held April 25, at which it was voted to establish a committee to review all diseases and conditions which would become a part of the program.

Doctor Sherman reported for a special committee to consider the payment to physicians of fees for their professional services, rather than having these services considered a part of a per diem payment for hospitalized patients. The Council approved the statement this committee proposed to use in this respect.

### 6. *State Department of Mental Hygiene:*

Doctor Marshall Porter, State Director of Mental Hygiene, invited the presentation to his office of any local problems encountered in mental health activities.

### 7. *American Medical Association:*

Doctor Dwight H. Murray, past president of the American Medical Association, reported on progress

being made in the A.M.A. in revising its administrative structure and solicited suggestions from the California delegation to the A.M.A.

### 8. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, reported on the activities of his department in measuring the radioactive fall-out found in both airborne particles and rainfall in recent weeks. Studies of this nature are continuing, he stated.

### 9. *Committee on Legislation:*

Doctor Dan O. Kilroy, chairman of the Committee on Legislation, reported the results of a poll taken of legislators on the feasibility of repealing a law already on the statute books (AB 679); the poll indicated the opinion of the bulk of the legislators that such repeal would not be feasible.

### 10. *Commission on Medical Services:*

Doctor H. G. MacLean, chairman of the Commission on Medical Services, presented the recommendation of that commission for a study to be undertaken by the Stanford Research Institute on the question of the encroachment of government on medical practice. It was recommended that such a study be undertaken, over an estimated nine-months period at a cost of about \$93,000, as a forerunner to the establishment within the Association of a research department for continuing socio-economic studies.

Further discussion urged the establishment of a strong study and planning group. On motion duly made and seconded, it was voted to appoint a committee to consist of one Councilor with the officers of the Association, to consider these proposals and to make recommendations to the Council for consideration.

### 11. *Medicare Program:*

Doctor John W. Rumsey submitted proposed principles to be followed in the Medicare program, where periods of 30, 45 or 60 days of aftercare were desired in surgical cases and where more than one physician provided service. On motion duly made and seconded, it was voted to approve these principles and to authorize Doctor Frank J. Cox to accompany Doctor Rumsey to Washington for discussions with the Department of the Army should his participation be deemed desirable.

### 12. *Cancer Commission:*

Doctor John W. Cline, chairman of the Cancer Commission, reported that there had been some decrease in requests for cancer conferences from the county societies and some decrease in attendance at the conferences held. He asked the Council's opinion on the propriety of staging such conferences under

the auspices of chapters of general practitioners. On motion duly made and seconded, it was voted to approve such conferences.

### 13. *Community Fund Drives:*

Discussion was held on questions being raised by some of the voluntary health agencies as to the advisability of their remaining in community or united funds in areas where there was a division between the need for research and community service funds. It was pointed out that many of the large national voluntary health agencies devote a large part of their funds to research and education, rather than to community service, and felt their needs were not being adequately covered in cities where the service aspect was given a higher priority in the distribution of the pooled funds. No action was taken.

### 14. *Central California Blood Bank:*

Doctor John F. Murray, president of the Fresno County Medical Society, reported that the Central California Blood Bank was operating successfully under the direction of Mr. Roy Jensen, executive secretary of the county medical society, that its bills were paid to date and that repayments to the California Medical Association might soon be possible. The chairman, on behalf of the Council, expressed gratification at this report.

### 15. *Judicial Commission:*

A letter from the Alameda-Contra Costa Medical Association, expressing disappointment with the handling of an appeal by the Judicial Commission of the Association, was read and discussed. It was reported that a By-Law amendment would be introduced by that society to broaden the authority of the Judicial Commission in determining punishment in disciplinary cases.

### 16. *Committee on Insurance:*

Doctor Arthur A. Kirchner, chairman of the Committee on Insurance, introduced Messrs. Charles O. Finley and Calvin Smith of Charles O. Finley and Co. and Mr. Robert Lyon of Lumbermen's Mutual Casualty Insurance Company, who discussed new insurance programs covering group major hospital expense and group accidental death policies which could be made available to Association members.

### 17. *Auditing Committee:*

Chairman Heron reported that the Auditing Committee had reviewed the expenditures of selected committees and had found them in order. Minor procedural changes in handling costs for some committees were suggested and approved.

### 18. *Medical Executives Conference:*

Mr. Hunton reported on a number of items which

had been discussed by the Medical Executives Conference at its April 25 meeting.

Mr. Hunton also reported on the progress of the current Annual Session and presented several proposals for improved communications between the Council and the office staff.

### 19. *Resolution of Approval:*

On motion duly made and seconded, an expression of approval for the services of Rollen Waterson to the medical profession for a number of years was approved for submittal to the House of Delegates by the Council.

### 20. *Audio-Digest Foundation:*

Doctor Rosenow gave a progress report on Audio-Digest Foundation, showing growing subscription lists in all services being offered and plans being made for adding new services for other specialties.

### 21. *Commission and Committee Nominations:*

Doctor Bostick presented a list of commission and committee nominations which, on motion duly made and seconded, was approved.

### 22. *Trustees of California Physicians' Service:*

On motion duly made and seconded, it was voted to nominate to the House of Delegates as Trustees of California Physicians' Service Doctors Dave F. Dozier and Arlo A. Morrison, Mr. Thomas Hadfield and Rt. Rev. Msgr. Thomas J. O'Dwyer for reelection and Doctor Paul Hoagland to fill an unexpired term.

### 23. *Committee on Indigent Care:*

On motion duly made and seconded, it was voted to request the Committee on Indigent Care to prepare, for Council approval, a definition of indigency and medical indigency.

### 24. *Committee on Other Professions:*

Doctor Wayne Pollock, chairman of the Committee on Other Professions, reported on meetings held with other groups on the subject of medical education. On motion duly made and seconded, it was voted to reaffirm the position taken earlier in regard to establishment of an additional medical school and to commend the committee for its efforts in this direction.

### *Adjournment:*

There being no further business to come before it, the meeting was adjourned on Wednesday, April 30, 1958, at 9 a.m., the above transactions representing recessed and reconvened meetings on each day from April 26 through April 30, 1958.

DONALD D. LUM, M.D., *Chairman*

ALBERT C. DANIELS, M.D., *Secretary*

## 435th Meeting

*Tentative Draft: Minutes of the 435th Meeting of the Council, Los Angeles, Ambassador Hotel, April 30, 1958.*

The meeting was called to order by Chairman Lum in the Frenchette Room of the Ambassador Hotel, Los Angeles, on Wednesday, April 30, 1958, at 6:30 p.m.

### Roll Call:

Present were President West, President-Elect Reynolds, Speaker Doyle, Vice-Speaker Heron, Secretary Daniels and Councilors MacLaggan, Wheeler, Todd, Foster, O'Neill, Kirchner, O'Connor, Shaw, Pearman, Harrington, Davis, Sherman, Lum, Bostick and Teall. Absent for cause, Editor Wilbur.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy and Gillette of C.M.A. staff, and Howard Hassard, legal counsel.

### 1. Introduction of New Members:

The chairman introduced to the Council and welcomed as members of it Doctors Malcolm Todd, Joseph P. O'Connor and Gerald W. Shaw, all of Los Angeles County, and Burt Davis, Santa Clara County.

The chairman also welcomed Doctor T. Eric Reynolds, newly elected President-Elect, and Doctor Ivan C. Heron, newly elected Vice-Speaker as members.

### 2. Election of Officers:

On nomination duly made and seconded in each instance, the following officers were elected for the 1958-1959 year:

Chairman.....Donald D. Lum  
Vice-Chairman.....Samuel R. Sherman

### 3. Appointments by Council:

On nomination duly made and seconded in each instance, the following appointments were voted for the 1958-1959 year:

Secretary.....Albert C. Daniels  
Executive Secretary.....John Hunton  
Editor.....Dwight L. Wilbur  
Legal Counsel.....Peart, Baraty & Hassard

### 4. Appointments by Council Chairman:

The chairman, with confirmation by the Council, appointed Doctors Heron (chairman), Sherman and Davis as members of the Finance Committee.

The chairman, with confirmation by the Council, appointed Doctors Heron, Shaw and Davis as members of the Board of Trustees of California Physicians' Service as Council representatives.

### 5. Bank Resolutions:

On motion duly made and seconded, it was voted to execute the usual bank resolutions, calling for authorized signatures of officers under bond for the withdrawal of Association funds.

### 6. Committee on Economics:

To carry out the Council's earlier decision on looking into the creation of a department of economic research within the Association, it was regularly moved, seconded and voted that Doctor Francis E. West be named chairman of a committee for that purpose, he to name the other members, subject to Council confirmation.

### 7. Advisory Committee to State Department of Social Welfare:

On motion duly made and seconded, it was voted to authorize Doctor Donald C. Harrington to arrange for a meeting of the Advisory Committee to the State Department of Social Welfare in the headquarters of the Los Angeles County Medical Association.

### 8. Time and Place of Next Meeting:

It was agreed that the next meeting of the Council would be held in San Francisco on Saturday, June 7, 1958. It was also agreed that members be given an opportunity to express their wishes on the possibility of scheduling some meetings in mid-week.

### Adjournment:

There being no further business to come before it, the meeting was adjourned at 6:55 p.m.

DONALD D. LUM, M.D., *Chairman*  
ALBERT C. DANIELS, M.D., *Secretary*

## In Memoriam

ALBERTON, EDMUND C. Died in San Francisco, April 19, 1958, aged 41, of heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1941. Licensed in California in 1941. Doctor Alberton was a member of the San Francisco Medical Society.



ANDERSON, AXCEL ENGELBERT. Died in Pasadena, April 11, 1958, aged 81. Graduate of the University of Michigan Medical School, Ann Arbor, 1904. Licensed in California in 1914. Doctor Anderson was a life member of the Fresno County Medical Society.



ANDERSON, CHARLES LEE. Died in San Jose, February 21, 1958, aged 54. Graduate of Emory University School of Medicine, Emory University, Georgia, 1928. Licensed in California in 1946. Doctor Anderson was a member of the Santa Clara County Medical Society.



BARKAN, OTTO. Died in San Francisco, April 26, 1958, aged 71. Graduate of Ludwig-Maximilians-Universität Medizinische Fakultät, München, Bavaria, Germany, 1914. Licensed in California in 1919. Doctor Barkan was a member of the San Francisco Medical Society.



BROCK, LOIS HOLMES. Died November 6, 1957, aged 56. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1928. Licensed in California in 1928. Doctor Brock was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.



CLARK, JOHN A. Died March 6, 1958, aged 79. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1907. Licensed in California in 1907. Doctor Clark was a member of the Santa Clara County Medical Society.



CORBETT, ELIZABETH. Died in San Jose, March 23, 1958, aged 41. Graduate of the University of Kansas School of Medicine, Lawrence-Kansas City, 1943. Licensed in California in 1955. Doctor Corbett was an associate member of the Santa Clara County Medical Society.



CRUMP, JOHN HOWARD. Died in Long Beach, May 2, 1958, aged 52. Graduate of New York Medical College, Flower and Fifth Avenue Hospitals, New York City, 1937. Licensed in California in 1940. Doctor Crump was a member of the Los Angeles County Medical Association.



CUTTING, JAMES ARTHUR. Died in Beverly Hills, April 24, 1958, aged 74. Graduate of Cooper Medical College, San Francisco, 1911. Licensed in California in 1911. Doctor Cutting was a retired member of the Santa Clara Medical Society and the California Medical Association, and an associate member of the American Medical Association.



ELLIS, LELAND W. Collapsed and died at the San Gabriel Country Club, April 10, 1958, aged 61. Graduate of the Stanford University School of Medicine, Stanford-San Francisco, 1921. Licensed in California in 1921. Doctor Ellis was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



HARBAUGH, ROSS W. Died in San Francisco, April 2, 1958, aged 64, in an automobile collision. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1913. Licensed in California in 1913. Doctor Harbaugh was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.



HENRY, L. L. Died April 20, 1958, aged 63. Graduate of the University of Michigan Medical School, Ann Arbor, 1925. Licensed in California in 1935. Doctor Henry was a member of the Los Angeles County Medical Association.

HEUSCHELE, WILLIAM HENRY. Died in San Jose, January 20, 1958, aged 73. Graduate of Ensworth Medical College, St. Joseph, Missouri, 1910. Licensed in California in 1918. Doctor Heuschele was a retired member of the Santa Clara County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



MACFARLANE, ARTHUR H. Died March 17, 1957, aged 86. Graduate of the University of Louisville School of Medicine, Louisville, Kentucky, 1896. Licensed in California in 1897. Doctor MacFarlane was a retired member of the Santa Clara County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



MCBURNIE, BENJAMIN A. Died December 27, 1957, aged 84. Graduate of the Chicago Homeopathic Medical College, 1896. Licensed in California in 1917. Doctor McBurnie was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



MCEACHEN, ESTHER ISABELLA. Died March 3, 1958, aged 65. Graduate of the University of Nebraska College of Medicine, Omaha, 1927. Licensed in California in 1949. Doctor McEachen was a member of the Los Angeles County Medical Association.



O'HARA, JOHN GERALD. Died in Woodland, March 20, 1958, aged 46, of cancer. Graduate of the St. Louis University School of Medicine, St. Louis, Missouri, 1936. Licensed in California in 1937. Doctor O'Hara was a member of the Yolo County Medical Society.



PAUL, JAMES RICHARD. Died in Los Angeles, March 28, 1958, aged 42, of lobar pneumonia. Graduate of the University of Nebraska College of Medicine, Omaha, 1942. Licensed in California in 1951. Doctor Paul was a member of the Los Angeles County Medical Association.



RINKENBERGER, FRED W. Died March 10, 1958, aged 79. Graduate of the University of Illinois College of Medicine, Chicago, 1906. Licensed in California in 1911. Doctor Rinkenger was a life member of the Los Angeles County Medical Association.



SMITH, HERBERT GORDON. Died in Palo Alto, February 4, 1958, aged 57. Graduate of McGill University Faculty of Medicine, Montreal, Canada, 1923. Licensed in California in 1926. Doctor Smith was a member of the Santa Clara County Medical Society.



STRANGE, SHELBY PHIPPS. Died April 6, 1958, aged 82. Graduate of Cooper Medical College, San Francisco, 1912. Licensed in California in 1912. Doctor Strange was a member of the San Francisco Medical Society.



WAHL, HUGO A. Died February 9, 1957, aged 87. Graduate of the College of Physicians and Surgeons of San Francisco, 1900. Licensed in California in 1900. Doctor Strange was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

# CALIFORNIA MEDICAL ASSOCIATION

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## Annual Meeting

Civic Auditorium

SAN FRANCISCO

February 22 to 25, 1959

### *Papers for Presentation*

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) no later than September 1, 1958.

### *Scientific Exhibits*

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than September 1, 1958. (No exhibit shown in 1958, and no individual who had an exhibit at the 1958 session, will be eligible until 1960.)

SCIENTIFIC PAPERS

SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT  
AN EARLY START HELPS

## SECRETARIES OF SCIENTIFIC SECTIONS

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ALLERGY . . . . . George F. Harsh  
2001 Fourth Avenue, San Diego 1

ANESTHESIOLOGY . . . . . Charles D. Anderson  
429 30th Street, Oakland 9

DERMATOLOGY AND SYPHILOLOGY . . Herbert L. Joseph  
607 Carolina Street, Vallejo

EAR, NOSE AND THROAT . . . . . Ewing Sellgman  
9735 Wilshire Boulevard, Beverly Hills

EYE . . . . . A. Ray Irvine, Jr.  
2010 Wilshire Boulevard, Los Angeles 57

GENERAL PRACTICE . . . . . James S. Eley  
624 Harris Street, Eureka

GENERAL SURGERY . . . . . William F. Pollock  
2200 Santa Monica Boulevard, Santa Monica

INDUSTRIAL MEDICINE AND  
SURGERY . . . . . Gandolph A. Prinszano  
4041 H Street, Sacramento 19

INTERNAL MEDICINE . . . . . Edward Shapiro  
123 North San Vicente Boulevard, Beverly Hills

OBSTETRICS AND GYNECOLOGY . . . Donald R. Nelson  
2439 Ocean Avenue, San Francisco 27

ORTHOPEDICS . . . . . Howard A. Mendelsohn  
415 North Camden Drive, Beverly Hills

PATHOLOGY AND BACTERIOLOGY . . . Leo Kaplan  
8720 Beverly Boulevard, Los Angeles 48

PEDIATRICS . . . . . Gordon L. Richardson  
10711 Riverside Drive, North Hollywood

PHYSICAL MEDICINE . . . . . Carrie E. Chapman  
VA Hospital, 13th and Harrison Streets, Oakland 12

PSYCHIATRY AND NEUROLOGY . . . John D. Moriarty  
7046 Hollywood Boulevard, Hollywood 28

PUBLIC HEALTH . . . . . Carolyn B. Albrecht  
920 Grand Avenue, San Rafael

RADIOLOGY . . . . . William H. Graham  
630 East Santa Clara Street, San Jose 12

UROLOGY . . . . . Earl F. Nation  
112 North Madison Avenue, Pasadena 1



# WOMAN'S AUXILIARY

## TO THE CALIFORNIA MEDICAL ASSOCIATION

### DEAR DOCTOR:

Do you know, sir, that one of your greatest assets is the Woman's Auxiliary to the California Medical Association?

Our program is based upon the fundamental fact that as wives of physicians we are privileged to gather together into groups as auxiliaries (in other words, as aids or helpers) to your county, state and national societies.

We are nearly seven thousand physicians' wives as organized members.

Some of the stipulations of our organizational policies and objectives are to assist your medical societies in their efforts on behalf of their program for the advancement of medicine and public health, and to participate in such activities as requested by your medical societies.

Where, I ask you, could you obtain the services of seven thousand people who would be so equipped as to fulfill the various demands of an exacting profession and present them in a creditable manner to your local communities, to your patients and to your fellow Americans—at any price?

Our priority projects vary from time to time. We are ever alert to the changing times and to the current problems which progress presents.

At present our priority projects are Legislation, Public Relations, American Medical Education Foundation, Nurse Recruitment, *Today's Health* and Physicians' Benevolence.

By your direction, we shall alert our members to the dangers of pending legislation as it will affect your profession and the people in our communities. The action taken will be in accordance with the decisions of our Advisory Board of your medical societies and under their direction.

### Public Relations

In all of our efforts we are aware of the value of good public relations, of the impressions created by the type of programs we present, of the form of our philanthropic programs and of the various recipients of these efforts.

### Nurse Recruitment

Nurse Recruitment has proved a most satisfactory project in its many phases.

With regard to public relations, recruitment has been our most gratifying activity. Many young women have been encouraged to make nursing their career. Many others have been enabled to continue in training through

scholarships and loans provided for by social benefits on the county level.

We have dozens of student nurse clubs all over the state. Through the cooperation of the public schools, girls in high schools and junior high schools are encouraged to join Future Nurses clubs. They are enthusiastic and seem eager to embrace this advantage in planning their future goals.

A little distantly removed, perhaps, from nursing careers, but still with the possibility of recruiting a few aspirants, is our "GEMS" program (Good Emergency Mother Substitutes). Groups of young girls and a few boys are formed into clubs to be trained in the functions of serving as baby sitters.

Our county chairmen of GEMS have work books to use as guides, and the importance of the responsibility of the sitter to the child she attends, to the parents and to her own safety is stressed. One county auxiliary has trained and "graduated" ten classes of ten students each in the past year. Good public relations? We think so!

At your suggestion, we have given the American Medical Education Foundation our heartiest support; and again through social benefits we have managed to contribute substantially to the success of this project. Every year since the Foundation was established, our California Auxiliary has received an award from the American Medical Association for its contributions.

As magazine saleswomen, perhaps we won't take the prizes; however, we are trying, and every year we are producing bigger and better results with *Today's Health*. It is another of our obligations, and we hope to put it over the top in the near future.

### Physicians' Benevolence

Physicians' Benevolence is another important obligation in our program, and our aim is to contribute a dollar a year per member. We usually exceed that amount.

We are a working community service group, rather than a meeting type of organization, and as our theme this year is "Cooperate and Achieve," we hope to develop our activities to give motivation and a sense of participation and achievement to each individual member by cooperation.

We need your cooperation also, doctor, to help us achieve our goals. Does your wife belong to the local Auxiliary? If not, won't you please encourage her to join us? With an enlarged membership, our effectiveness can be greatly increased.

As the official spokesman for the members of the Woman's Auxiliary, I would like to thank the members of the California Medical Association for their recognition of our efforts by presenting me to their House of Delegates at their closing meeting of the 1958 Annual Session, and for the armful of beautiful red roses.

The continued efforts of the Auxiliary membership will be a pleasure.

MRS. NEWELL JONES  
President, Woman's Auxiliary to the  
California Medical Association

# NEWS & NOTES

## NATIONAL • STATE • COUNTY

### LOS ANGELES

**Dr. Ralph A. Kutzmann** of Los Angeles was installed as president of the American Urological Association at the recent annual meeting of that organization in New Orleans.

\* \* \*

**Dr. George C. Griffith**, Pasadena, was elected president of the Los Angeles County Heart Association at the annual membership meeting of the organization last month.

\* \* \*

Results of the State **Golf Tournament of the California Medical Association**, held at the Wilshire Country Club April 28, with the Southern California Medical Golf Association as host, were as follows:

The perpetual trophy presented by Boyle & Company for field low net was won by Dr. Herbert Duncan (84-17-67). The field low gross trophy, donated by the Eldon H. Canright Company, was won by Dr. Paul Travis with a 72.

Winners in Class A (first, second, third, and fourth low net, respectively) were Drs. John Gerich (79-12-67), Leland Blanchard (76-8-68), R. H. Bandelier (84-15-69), and Paul E. Rekers (82-13-69). First, second, third, and fourth low gross winners were Drs. J. Gordon Erickson (74), Walter Kearns (76), Mr. Richard Ries (77), and Dr. Thomas Maxwell (78).

Winners in Class B (first, second, third, and fourth low net, respectively): Drs. J. H. Abramson (81-14-67), LeRoy Mundall (87-19-68), Victor Hallstone (88-17-71), John E. Novak (89-18-71). First, second, third, and fourth low gross, respectively: Drs. Homer Pheasant (83), Roy E. Fallas (83), Ulrich C. Wissner (85), and Henry K. Oetting (88).

Winners in Class C (first, second, third, and fourth low net, respectively): Drs. Michael Lau (94-24-70), Ralph Ferguson (95-25-70), Mr. Eldon H. Canright (96-25-71), and Dr. William R. Molony, Jr. (100-28-72). First, second, third, and fourth low gross, respectively: Drs. Tom Gairdner (93), Royal C. Payne (93), Robert Ellenburg (94), and Sidney Shear (95).

### SAN FRANCISCO

The appointment of **Dr. Robert H. Alway** as dean of **Stanford University School of Medicine** was announced recently by Dr. Wallace Sterling, president of the university. Dr. Alway had been acting dean for the past year, and now "has been persuaded to reconsider his original refusal to consider appointment" on a permanent basis, Dr. Sterling said.

\* \* \*

The 24th annual meeting of the **American College of Chest Physicians** will be held in San Francisco, June 18 to 22, immediately before the opening of the meeting of the American Medical Association there.

\* \* \*

**Dr. M. Coleman Harris** was elected secretary of the American College of Allergists at the annual meeting held in Atlantic City, April 20 to 25.

**Dr. R. Glenn Craig**, associate professor of clinical gynecology, University of California School of Medicine, San Francisco, was installed as president of the American College of Obstetricians and Gynecologists at the recent meeting of the organization in Los Angeles.

\* \* \*

All alumni of **Northwestern University Medical School** (and their wives if present) are invited to a luncheon Tuesday, June 24 at 12:30 p.m., at the Hotel Canterbury, 750 Sutter Street, San Francisco.

\* \* \*

The annual luncheon of the **Christian Medical Society** will be held at the Fairmont Hotel, San Francisco, June 23, at noon. Billy Graham will be the speaker. Physicians and their wives are invited. Reservations and further information may be obtained from Merrill J. Alexander, M.D., 460 Winston Drive, San Francisco 27, telephone LOMBARD 6-4573.

### TRINITY

**Dr. V. Thery Neff**, formerly of Fresno, has been appointed county physician of Trinity County by the board of supervisors. The post had been vacant since the resignation of Dr. Robert Breeden in January of this year. Dr. Breeden retained his position as the county's health officer.

### GENERAL

The California State Department of Public Health has announced that after July 1, 1958, physicians sending **Confidential Morbidity Reports** to local health departments must use regular stamped envelopes rather than the 3½"x6" manila, postage-free envelopes previously supplied for this purpose. The postage-free privilege is being discontinued for morbidity reports as an economy move by the Federal Government.

Present supplies of envelopes should either be destroyed or sent to the local health officer since their use after July 1 will be in violation of federal postal laws, the announcement said.

It was suggested that, when convenient, physicians report cases of communicable diseases to the local health department by telephone.

\* \* \*

The Arthritis and Rheumatism Foundation has announced the availability of **predoctoral, postdoctoral and senior investigatorship awards** in the fundamental sciences related to arthritis for work beginning July 1, 1959. Deadline for applications is October 31, 1958.

The program provides for three awards: Predoctoral Fellowships, limited to students who hold a bachelor's degree, tenable for one year, with stipends ranging from \$1,500 to \$3,000 per year; Postdoctoral Fellowships, limited to applicants with an M.D. or Ph.D. or their equivalent, tenable for one year, with stipends ranging from \$4,000 to \$6,000 per year; and Senior Investigatorship, for candidates holding or eligible for a "faculty rank" such as instructor or assistant professor (or equivalent) and who are sponsored by their institution. Stipends are from \$6,000 to \$7,500 per year and are tenable for five years.

Further information may be obtained from the Medical Director, Arthritis and Rheumatism Foundation, 10 Columbus Circle, New York 19, N. Y.



## POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

### UNIVERSITY OF CALIFORNIA AT LOS ANGELES

**Techniques of Hypnosis** (enrollment limited). Monday through Wednesday, June 16 to 18. Fifteen hours. Fee: \$65.00.

**Advanced Techniques and Application of Hypnosis** (enrollment limited). Wednesday through Friday, June 18 to 20. Fifteen hours. Fee: \$110.00.

**Public Health Practices: Contributions of the Behavioral Sciences to Public Health Medicine** (enrollment limited). Wednesday, June 18 to July 23. Thirty-six hours. No fee.

**Dissection of the Thorax, Abdomen and Pelvis** (enrollment limited to 32). Friday and Saturday, June 27 and 28. Twelve hours. Fee: \$125.00.

**Techniques of Surgery**. Monday through Friday (limited to 14), July 28 to August 1. Forty hours: Fee: \$500.00.

**Internal Medicine** (at University of California Residential Conference Center, Lake Arrowhead), Wednesday through Saturday, August 20 to 23. Sixteen hours. Fee \$150.00 (including room and meals).

**Anesthesiology**. Wednesday through Friday, August 27 through August 29. Sixteen hours. Fee: \$50.00.

**Contact:** Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

### UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

**Microbiology and Immunology in Clinical Medicine**. Tuesday through Friday, July 22 through July 25. Sixteen hours. Fee: \$40.00.

**Refresher Course in Anatomy**. Monday through Friday, July 28 through August 1. Thirty-five hours. Fee: \$75.00.

**Selected Topics in Physiology and Pharmacology**. Monday through Tuesday, August 4 through August 12. Thirty-two hours. Fee: \$75.00.

**Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes**. Two or three month course limited to one enrollee per month. Fee: \$350.00.

**Contact:** Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrorse 4-3600, Ext. 665.

### STANFORD UNIVERSITY SCHOOL OF MEDICINE

**Morning Clinical Conferences**, each Monday, Room 515. **Contact:** D. H. Pischel, M.D., Professor, Division of Ophthalmology, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15.

### UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

**Cardiac Resuscitation**. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m., USC Medical Research Building, Room 211, 2025 Zonal Avenue. Residents and interns of Los Angeles County, and all armed forces medical personnel admitted without fee. Tuition for all other physicians \$30.00. (Each session all-inclusive.)

**Basic Home Course in Electrocardiography**. One year Postgraduate Series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: \$100.00.

**Advance Home Course in Electrocardiography**. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: \$85.00. Physicians may register at any time.

**Special Announcement:** From August 5 to August 21, 1958, the University of Southern California School of Medicine will hold a postgraduate course in Honolulu and on board the *S.S. Matsonia*. The course will center around actual case histories, which will be used to emphasize diagnostic and therapeutic features.

**Contact:** Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

### COLLEGE OF MEDICAL EVANGELISTS

**Audio-Visual Postgraduate Refresher Courses**. Courses are made up of four or more half-hour lectures each, recorded on hi-fi magnetic tape and illustrated by 35-mm. filmstrips or slides in full color, and adapted for use on any standard tape recorder and filmstrip or slide projector, automatic or manual.

**Contact:** Paul D. Foster, M.D., chairman, Committee on Audio-Visual Courses, College of Medical Evangelists School of Medicine, 316 North Bailey St., Los Angeles 33.

**AUDIO DIGEST FOUNDATION**, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

**AUDIO-DIGEST** plans to begin a new series of programs covering the specialty of Anesthesiology. The first of these will be issued on or about September 1, 1958. Those wishing to be charter subscribers to this tape-recorded review of what is new and important in the field of Anesthesiology should write to Mr. Claron L. Oakley, Editor, 1919 Wilshire Boulevard, Los Angeles 57, DUnkirk 7-2067, for order form and further information.

**Contact:** Claron L. Oakley, editor, 1919 Wilshire Blvd., Los Angeles 57.

## Medical Dates Bulletin

### JUNE MEETINGS

AMERICAN COLLEGE OF PHYSICIANS, Course in Internal Medicine, University of California Medical Center, San Francisco, June 16 to June 22, all day, each day. *Contact:* E. R. Loveland, executive secretary, American College of Physicians, 4200 Pine Street, Philadelphia 4, Pennsylvania.

SYMPOSIUM ON NUTRITION AND THE AGING PROCESS to be held at the Highland-Alameda County Hospital, June 18 and 19, under auspices of American Geriatrics Society and Alameda-Contra Costa Medical Association. Symposium is directed specifically toward clinicians. Tuition is \$25 to nonmembers of organizations involved. *Contact:* Laurance W. Kinsell, M.D., Director, Institute for Metabolic Research, 2701 14th Ave., Oakland 6.

AMERICAN COLLEGE OF CHEST PHYSICIANS 24th Annual Meeting, June 18 to 22, San Francisco. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut St., Chicago 11, Ill.

AMERICAN MEDICAL ASSOCIATION Annual Meeting, June 23 to 27, San Francisco. *Contact:* American Medical Association, 535 North Dearborn St., Chicago 10.

AMERICAN PROCTOLOGIC SOCIETY, June 29 to July 3, Los Angeles. *Contact:* Norman D. Nigro, M.D., secretary, 10 Peterboro St., Detroit 1, Michigan.

### JULY AND AUGUST MEETINGS

HAWAII MEDICAL ASSOCIATION Summer Conference, July 1 through July 3, Honolulu. *Contact:* Lee McCaslin, executive secretary, 510 S. Beretania St., Honolulu.

IDAHO STATE MEDICAL ASSOCIATION Annual Convention, July 6 to 9, Sun Valley, Idaho. *Contact:* Armand L. Bird, executive secretary, 364 Sonna Building, Boise.

ROCKY MOUNTAIN CANCER CONFERENCE, July 9 and 10, Shirley-Savoy Hotel, Denver. *Contact:* Alexis E. Lubchenco, M.D., 835 Republic Bldg., Denver 2, Colo.

NEW MEXICO CHAPTER ACADEMY OF GENERAL PRACTICE Ruidosa Summer Clinic, July 21 through July 24, Ruidosa, New Mexico. *Contact:* Frederick R. Brown, M.D., secretary-treasurer, 207 N. Union, Roswell, New Mexico.

WESTERN REGIONAL MEETING, INTERNATIONAL COLLEGE OF SURGEONS, Riverside Hotel, Reno, Nevada, August 21 to 23. *Contact:* Leo D. Nannini, M.D., 190 Mill Street, Reno, Nevada. For reservations, write Riverside Hotel, Reno, Nevada.

### FALL AND WINTER MEETINGS

SAINT JOHN'S HOSPITAL POSTGRADUATE ASSEMBLY, September 11 through September 14, Saint John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, Postgraduate Assembly, 22nd St. at Santa Monica Blvd., Santa Monica.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Convention, September 14 to 17, 1958, Spokane, Washington. *Contact:* Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Wash.

TWELFTH ANNUAL POSTGRADUATE ASSEMBLY, September 17 and 18, San Diego County General Hospital, San Diego. *Contact:* William T. Nute, executive secretary, San Diego County Medical Society, 3427 Fourth Avenue, San Diego 3.

NEVADA STATE MEDICAL ASSOCIATION Annual Meeting, September 17 through 20, Elko, Nevada. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 188, Reno.

PACIFIC DERMATOLOGIC ASSOCIATION Tenth Annual Meeting, September 18 through 20, Hotel del Coronado, Coronado, Calif. *Contact:* Louis H. Winer, M.D., secretary-treasurer, 9915 Santa Monica Blvd., Beverly Hills, Calif.

COLORADO STATE MEDICAL SOCIETY Annual Session, September 24 through 27, Broadmoor Hotel, Colorado Springs. *Contact:* Harvey T. Sethman, executive secretary, 835 Republic Bldg., Denver 2.

CALIFORNIA ACADEMY OF GENERAL PRACTICE Tenth Annual Scientific Assembly, October 5 to 8, Masonic Temple, San Francisco. *Contact:* William W. Rogers, executive secretary, 461 Market Street, San Francisco 5.

FIFTH ANNUAL FORT MILEY SURGICAL CLINICS AND SYMPOSIUM sponsored by the San Francisco Academy of General Practice in cooperation with Faculties of Stanford University School of Medicine and University of California School of Medicine at Fort Miley Veterans Administration Hospital, 42nd Avenue and Clement Street, San Francisco, will start on October 14, 1958 at 8 p.m. and each Tuesday thereafter ending November 18, 1958. *Contact:* Alexander F. Fraser, M.D., 3490 20th Street, San Francisco.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting, October 17 to 19, Ahwahnee Hotel, Yosemite. *Contact:* Mrs. Mildred B. Coleman, executive secretary, or Dr. Clyde C. Greene, secretary-treasurer, 350 Post St., San Francisco 8.

AMERICAN HEART ASSOCIATION Scientific Sessions and Meetings, October 24 to 28, Fairmont Hotel and Civic Auditorium, San Francisco. *Contact:* J. Keith Thwaites, executive director, California Heart Association, 1428 Bush Street, San Francisco 9.

LOS ANGELES COUNTY HEART ASSOCIATION 28th Annual Professional Symposium, October 29 and 30, Wilshire Ebell Theater. *Contact:* Los Angeles County Heart Association, 660 S. Western Ave., Los Angeles 5, DUnkirk 5-4231.

SANTA BARBARA COUNTY HEART ASSOCIATION, Professional Symposium, 9 to 5 p.m., November 1, Biltmore Hotel, Santa Barbara. *Contact:* Mrs. Katherine McCloskey, executive director, 18 La Arcada Court, Santa Barbara.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, February 22 through February 25, 1959, Palace Hotel, San Francisco. *Contact:* John Hunton, executive secretary, 450 Sutter Street, San Francisco 8; or Ed Clancy, director of Public Relations, 2975 Wilshire Blvd., Los Angeles 5.



## THE PHYSICIAN'S *Bookshelf*

**GYNCOLOGIC AND OBSTETRIC PATHOLOGY**—With Clinical and Endocrine Relations—Fourth Edition—Emil Novak, A.B., M.D., D.Sc. (Hon. Trinity College, Dublin, Tulane), F.A.C.S., F.R.C.O.G. (Hon.). Late Assistant Professor Emeritus of Gynecology, The Johns Hopkins Medical School; Gynecologist, Bon Secours and St. Agnes Hospitals, Baltimore; Fellow and Past President, American Gynecological Society; and Edmund R. Novak, A.B., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Gynecologist, Johns Hopkins, Bon Secours, Hospital for the Women of Maryland, and Union Memorial Hospitals, Baltimore, Md. Published by W. B. Saunders Co., Philadelphia and London, 1958. 650 pages, \$14.00.

W. B. Saunders Company of Philadelphia and London has just published a fourth edition of Emil Novak's "Gynecologic and Obstetric Pathology" to which the name of Edmund R. Novak has been added as co-author. One wonders why this has been done since this new edition essentially is a reprint of the third edition with very few minor changes in the text. It is fortunate, indeed, that this valuable treatise has not been disturbed materially for it is a classic as it stands and as such constitutes a living memorial to Emil Novak.

Aside from an occasional rearrangement of illustrations, the list of references has been augmented. Regrettably, the chapter dealing with common breast lesions of gynecologic interest has been dropped. The chapter concerned with abnormalities and diseases of the placenta previously authored by L. M. Hellman, appears now under the authorship of R. E. L. Nesbitt, Jr., who has made a few minor changes in the text and illustrative material. A valuable addition is a concise chapter on exfoliative cytopathology, authored by John H. Frost, which furnishes all the essentials for the better understanding of this diagnostic procedure.

Novak's Pathology is too well known to need any praise. Its final edition is a worthy tribute by the publishers to the memory of an indefatigable student.

LUDWIG A. EMGE, M.D.

**CARDIOVASCULAR REHABILITATION**—Edited by Paul Dudley White, M.D., Massachusetts General Hospital, Boston; Howard A. Rusk, M.D., Director, Institute of Physical Medicine and Rehabilitation, New York-Bellevue Medical Center; Bryan Williams, M.D., Clinical Instructor in Medicine, Southwestern Medical School, University of Texas; and Philip R. Lee, M.D., Department of Internal Medicine, Palo Alto Clinic. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, N. Y., 1957. 155 pages, \$6.50.

This book summarizes a conference held at the New York University-Bellevue Medical Center in May 1956. The 35 participants include many well-known teachers and investigators in cardiology and occupational medicine. The format of the panel discussion has been retained, making for readable, personal discussions organized into five chapters on emotions, work, and the practice, teaching and research in cardiovascular rehabilitation. There is no index, but an excellent reference section of 29 pages is included.

As emotions affect cardiovascular physiology, anxieties affect rehabilitation, obscuring or mimicking symptoms. Iatrogenic heart disease does not escape discussion.

Measurements of energy expenditures at work are shown to vary enormously with emotional and environmental stress. A skilled worker who likes his job, in a comfortable environment without tension, minimizes the metabolic cost of exertion. The total energy cost of the day, at work and at home, determines work tolerance and negates the rule, "work done in comfort is done in safety," particularly for those who retain salt and water and are awakened at night by acute pulmonary edema.

Although coronary disease does not make a better employee, those who return to work have less absenteeism than the average employee. Often patients with angina have fewer pains on the job than off.

The practice of cardiovascular rehabilitation requires an estimation of prognosis based on accurate diagnosis, and requires the physician to transmit to the patient the expectation of return to work. The role of the Cardiac Work Classification Units of the American Heart Association in educating physicians and employers in the feasibility of this expectation is stressed. These units teach the use of social workers and vocational counselors as consultants, not the abandonment of the patient to ancillary workers. Disability is a social, legal and economic term more than a medical one, related to the availability of jobs as much as to the skills and cardiac limitations of the patient; yet these limitations require that control of the patient be retained by the physician.

The book supplies little new knowledge, but illustrates how the application of available knowledge can result in great medical and social progress, and can add enormously to the effectiveness of the practicing physician. The principles of cardiovascular rehabilitation should permeate cardiovascular teaching at all levels.

VERNON C. HARP, JR., M.D.

**URINE AND THE URINARY SEDIMENT**—Second Edition—Richard W. Lippman, B.S., M.D., Fellow of the John Simon Guggenheim Memorial Foundation. Charles C. Thomas, Bannerstone House, 301-327 East Lawrence Avenue, Springfield, Ill. 140 pages, \$8.50.

Completely revised and set from new type, this second edition follows closely the pattern successfully established in that of 1952. The three main divisions again are concerned with proteinuria and formed elements of the sediment, a precise account of the urine in various diseases, and methods useful in urinalysis. The subtitle "A Practical Manual and Atlas" indicates what well may be the volume's most enduring value, namely, a splendid series of colored photomicrographs of the urinary sediment. Nearly doubled in number since the first edition, the illustrations show the formed elements as these are found in many renal disorders. The reproductions are excellent, and the accuracy of identification and diagnosis is supported by the author's experience as a student and associate of Thomas Addis. The book is recommended warmly to all laboratory technicians, students and physicians.

**IT PAYS TO BE HEALTHY—A World-Renowned Physician Guides You to Success, Happiness and Health in Your Work**—Robert Collier Page, M.D., F.A.C.P. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1957. 285 pages, \$4.95.

This book appears to be addressed to business executives. It is written in a forceful, aggressive style. It is positive, vigorous and decisive, with no suggestion of false humility. It may be assumed that Dr. Page knows that this is the effective approach to the readers whom he addresses. He has had a long and successful career as a physician in industry.

The principal theme expressed in the opening chapter, "The successful man is also a man who will turn down a promotion if he is not promotion material, and herein is a moral for everyone of us who thinks of life as more than just a struggle to earn a living," is reiterated in varied forms. There are a number of case histories, most of them showing the bad ends people come to when they climb to positions which are beyond their capacities, or when they neglect medical advice.

There is considerable emphasis upon self-analysis as a way to avoid or correct "situational states" and functional disorders. One wonders whether the people who most need it can carry out such introspection, and whether this introspection is beneficial to those who are able to apply themselves to it. Headaches, obesity, alcoholism, psychiatric problems, "ulcers—the service badge of competition," cancer and heart disease are discussed, sometimes in over-optimistic terms. There is an excellent chapter on choosing the physician, and how to get along with him. Vocational rehabilitation is given sympathetic and understanding discussion. The problems of retirement from work are stated well, and definite advice on preparation for them is given.

It is somewhat disappointing that, although the author expresses enthusiasm for "constructive medicine," he does not emphasize constructive health practices. His admonitions are mostly negative: Don't work too hard, don't eat too well, don't drink too much. There is an extended list of foods to avoid, if one would evade obesity, but only generalizations about an adequate diet. Adequate rest, recreation, and exercise are given a few words in the opening chapter, but subsequently glossed over.

Dr. Page also gives a view from the inside of U. S. business operations, which is illuminating though ambiguous. He writes at one stage of "the kid-glove jungle" emphasizing the coldly competitive attitudes encountered with great frequency (if he is to be believed). In another place he gives the assurance that business managements are generally ready to judge people on their individual merits and to treat them accordingly. A very distressing feature is his own failure to express any indignation about a particularly vicious example of corporate irresponsibility described in one of his case reports. If interpersonal competition is as ruthless as he indicates, it is time for a moral evaluation. He recommends the thoughtful reconsideration of the true interests of the individual, and decision as to the worth of the rewards won through bitter competition. This is a step in the right direction.

**THE ROAD TO INNER FREEDOM—The Ethics—Baruch Spinoza.** The Philosophical Library, 15 East 40th St., New York 16, N. Y., 1957. 215 pages, \$3.00.

It is rather presumptuous to review this remarkable book, a sampling by the editor from Spinoza's "Ethics" from a medical standpoint, since to isolate certain details from its panorama is to do great injustice. However, one can be comforted by remembering that Spinoza has withstood far worse.

This work, except in style, is frighteningly modern and scientific—frightening in that what was written hundreds of years ago is still new, exciting, and not yet accepted by many trained in scientific disciplines. It suggests that man is worthwhile insofar as he reasons and questions, insofar as he does not prematurely accept an answer—any answer—merely to allay his anxiety, that man's hope for the future is reasoning curiosity (though not intellectualization), that men "should come at last to live under the dominion of their own reason." The concept of psychic determinism which Freud so vigorously demonstrated, that ideas and emotions are not the result of spontaneous generation but result from ascertainable causes (biological and psychological) is essential to Spinoza's thought. "In the mind there is no absolute or free will; but the mind is determined to wish this or that by a cause, which has also been determined by another cause, and this last by another cause and so on to infinity." It is this pressing on to follow the observable facts wherever they may lead that separates the scientist from the scientific technician, no matter how brilliant a technician. The scientist will not lay off because what he finds as he follows his work is not what he expected or what he wanted or what he would be praised for. The "disturbers of the world's sleep," Copernicus and Galileo, Darwin, Freud, and the others who have found themselves unable to compromise their observations for inner and external expediency, have tested Spinoza's epistemology and have indeed disturbed—perturbed—us.

Spinoza's attitude toward psyche—"I regard human emotions and their properties as on the same footing with other natural phenomena"—was a revolutionary statement in his day, and there are many today who would like to burn him at the stake if they could only lay hands on him. How reminiscent is his statement that men should "come at last to live under the dominion of their own reason" to Freud's feeling that where Id was there shall Ego be. Or consider the quality of insight, a goal of psychoanalysis and other forms of education, a quality which only the human animal possesses to any degree and then rarely is able to use; for Spinoza, as for the psychoanalyst, to harness the emotions, especially the unconscious sources, becomes a method of capturing some degree of free will and thus a little freedom from the scarcely controlled passion of the primary process. "An emotion comes under our control, and the mind is less passive in respect to it, in proportion as it is more known to us." Fundamentals of human thought and behavior—the pleasure-pain principle, the reality principle, man as a social animal, man's need to falsify observations with undemonstrable abstractions, the myth of man as the center of the universe, or even master of his own ship, symbolization, condensation, abstract thought, disturbances in interpersonal communication—all of these chapters in the psychiatric textbook were comprehended long before the present era of psychiatry.

It should be gratifyingly disturbing for those interested in psychological medicine to sample Spinoza's genius in this small and powerful book.

ROBERT J. STOLLER, M.D.

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**THE PETER T. BOHAN MEMORIAL LECTURES ON MEDICINE—First Series—University of Kansas Press** 1957. Date of Publication: December 30, 1957. \$3.00, 128 pages.

This collection of seven lectures by eminent clinicians is put together as a labor of love by Dr. Bohan's former students and by admiring physicians. Handsomely gotten up, well printed on fine paper, the lectures are all of interest, if not of equal profoundness. Some of the contributors are R. L. Haden, W. C. Alvarez, J. T. King and P. D. White.

ARTHUR L. BLOOMFIELD, M.D.